Dissertation

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Exchange rate policy and external imbalance : the Nigerian experience : 1960-1989

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EXCHANGE RATE POLICY AND EXTERNAL IMBALANCE: THE NIGERIAN EXPERIENCE; 1960 - 1989

BY

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DECLARATION SHEET

I, BOGUNJOKO, **Julius Oladipo**, declare that to the best of my knowledge, the data contained in this thesis is from original research and the thesis has not been submitted to any other University for examination.

All references in this work have also been duly acknowledged

8/1/92

BOGUNJOKO, J.O.

DEDICATION

This thesis is dedicated to the memory of my father, Mr. Peter Olawuyi Bogunjoko and to them whose invaluable support both in thought, moral and financial has guided me unto this academic path of prosperity.

C E R T I F I C A T I O N

This thesis entitled "Exchange Rate Policy and External Imbalance: The Nigerian Experience, 1960 - 1989" by Julius Oladipo Bogunjoko meets the regulations governing the award of the degree of Master of Science (M.Sc) in Economics of Ahmadu Bello University, Zaria and is approved for its contribution to knowledge and literary presentation.

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ABSTRACT

Effort has been made in this work to draw a comparative analysis of the alternative exchange rate policy adopted in Nigeria and to ascertain the relative influence of the real exchange rate on Nigerian external trade. The study employed two methods of analysis, namely: historical and econometric methods.

Using conventional economic indicators, the study concludes that the flexible exchange rate, tagged second-tier foreign exchange market (SFEM) has generated a relatively more buoyant external payment account. The Econometric method, on the other hand, has confirmed the widespread belief that exchange rate appreciation boosts import consumption and weakens the non-oil exports. Furthermore, the sub-sectoral analysis of imports demand suggests that the exchange rate policy has a differential impact on import components that must be noted in policy decision. To strengthen the role of flexible exchange rate in balance of payments management, the study recommends that the burden of external adjustment should be borne, at least partially, by restrictive financial policies, viz: monetary targets should be adhered to as much as possible, so that they will not be reduced to a mere window dressings and a stumbling block to the potency of SFEM.

CHAPTER ONE

1.1 INTRODUCTION

One of the most urgent tasks of macro-economic policy in Nigeria is currently how to evolve an optimal exchange rate for the naira. The depth of the need has grown so much that it has occupied an alarming proportion of discussions in economic conferences and policy discussion forums. It is now widely appreciated that exchange rate policies generate widespread economic distortions, and give incorrect signals to economic agents and result in greater economic instability (Willet: 1986, p. 101 - 112).

In the 1970s, the issue of naira exchange rate misalignment was never a concern to the policy makers. The overvaluation of the naira in-so-far it attracted attention was looked upon as an academic issue. This is because the oil boom produced abundant export surpluses and Foreign Exchange (FOREX) reserves had accumulated. Available data show that the months-of-imports equivalent of FOREX reserves had increased from an average of 3.5 in 1960 to 1969 to 6.34 in the 1970s. Compared to the 4 months-of-imports widely acceptable measure of minimum reserves adequacy in many countries - Nigeria inclusive, the outlook of the FOREX reserve in the 1970s seemed comfortable and accounted for the negligence of the policy response to naira over-valuation.

However, by the early 1980s the question of naira over-valuation cum unhealthy external account was no longer an academic question but a problem needing practical solution. At

the international plane, also currency over-valuation of the less developed countries (LDCs) attracted attention assuming a prominent reference point for explaining the widespread external imbalances and complexity in the management of the LDCs external resources. For instance, the World Bank (WB) in 1984 opined that "the structural imbalance in the less developed countries external sector is dependent upon a wrong choice of an exchange rate policy" (World Bank: 1984).

The root of the naira over-valuation cum external imbalance has been traced to the fact that the government had maintained a relatively constant nominal exchange rate in light of the changing fortunes of the internal and external economic conditions (Mawuli: 1986, Oshikoya: 1990). Between 1960 and 1986, the Nigerian economy has been managed virtually by the Fixed Exchange Rate System (FDERS) - serviced and supported by unrestricted administrative control and FOREX reserve depletion. The FDERS was initiated in early 1960s following the widespread acceptance of the planning philosophy in government circle upon the unrestricted urge "to transform and domesticate the distorted and dependent production structure of the inherited colonial economy and to accelerate the pace of expansion of the economy" (Bogunjoko: 1990, p.3). Traditionally, the FDERS was adopted to preserve the value of Nigeria FOREX reserves and maintain a stable naira. Besides, available record show that, among other things, the FDERS has also been pursued as an impetus to the centralization and optimal deployment of FOREX resources, execution of import Substitution Industrialization (ISI), reduction of the inflationary spiral, and in particular, pursuing

a stable and sustainable external payment position. Ironically, however, history reveals that despite the exigency of the FDERS, the results of FDERS have been marginal and largely unsatisfactory. Although, statistics show that the FDERS has been characterized by a stable and predictable exchange rate, it is disheartening that the attainment of a meaningful ISI, reduction of the inflationary spiral, and, of course, a healthy external payment equilibrium have not assumed the expected ends. The rigid link of the FDERS with the changes in the world economy has suggested a passive integration that resulted in naira over-valuation, external imbalances and mounting spiral of external debt burden.

Overtime, the depth of the Nigeria external imbalances has attracted many policy response. Prior to Structural Adjustment Programme (SAP) in 1986, such policies such as economic stabilization act of 1982 (popularly known as Austerity measures), the currency exchange exercise of 1984, the counter-trade policy of 1985 and the 15-month economic relief emergency measure of October 1985 have been articulated and implemented. Moreso, between 1980 - 1985, evidence showed that the monetary authorities introduced a policy of gradual depreciation to a hitherto FDERS for the naira: the value of the naira fell gradually from ₦1 = $1.8367 and ₦1 = $1.40 in 1980 and 1982 respectively to ₦1 = $1.13 shortly before the commencement of the SAP. Nevertheless, the measures adopted were largely in the class of the quantitative and trade restriction called expenditure reducing policy measures. Ironically, these measures

proved, not only, grossly inadequate in dealing with the intractable problems of external economy, but often tended to aggravate the problem. For example, statistics showed that the excess outflow of FOREX over inflow did not only persisted but also the depth of the trade arrears deepened; it increased from 2,758.8 million naira in 1983 to 5,904.4 million in 1985. It is in this context that the 1986 federal-budget was initiated. Amongst other goals, the Federal budget sought to de-emphasize controls and alleviate the problem of naira over-valuation via an adjustment in the character of the Nigeria's exchange rate policy. Viz, a market-oriented exchange rate policy tagged second-tier foreign exchange market (SFEM) was emphasized, and later in the middle of the year effected. The SFEM is a variant of a flexible exchange rate system (FBERS). SFEM aimed at shifting both the pattern of domestic demand from import towards home-produced goods and the pattern of output from non-tradeables towards tradeables and thereby improving the external payment position.

1.2 STATEMENT OF THE PROBLEM

In the past few years, exchange rate (ER) policy has attained a great prominence in economic and policy discussion in developing countries - Nigeria inclusive. Like the other main aspect of the government policy, namely fiscal and monetary policies, a country's ER policy plays an important role in the pattern of resource allocation in the economy and ultimately in influencing the pattern of the economic development. ER policy plays an important role because it affects relative prices of

factors of production (domestic factor versus imported factors) as well as relative prices of products (Aigbokhan: 1988, p.41).

Undoubtedly, the FDERS pursued prior to SFEM in 1986 had weaken the Nigeria external economic relation. Hence, following the exchange rate adjustment (ERA) in the SAP package of 1986, economists have contended that "to argue against the adjustment is to make a false suggestion that the Nigerian economy as it function pre-SAP has attained an optimal shape" (Dike: 1988, P.1). On another plane, however, Kwanashie, in his foreword to Ayodele (1988), has queried that to assume that the new ER policy supplied by SFEM is optimal is to be hypocritical. This is because "within the theoretical framework of the new exchange rate policy could be found contradictions." It become necessary, therefore, to investigate the relative efficacy of the FDERS and FBERS in Nigeria as policy strategies in the on-going effort adjustment of the Nigerian economy. This research will investigate the following problem:

i) is the new ER policy (SFEM) capable and sufficient to resolve the crisis of naira over-valuation and external imbalances?

ii) How far has the current SAP-SFEM gone to optimize Nigerian external economic relations? And what are the limitations?

1.3 OBJECTIVE OF THE STUDY

i) to appraise the impact of the ER policy in the Pre-SAP period serviced by import licensing and exchange controls on the one hand, and SAP period which relied substantially on free market forces on the other;

ii) to ascertain if it is advisable for Nigeria to continue the current market oriented ER or to return to the FDERS;

iii) to ascertain the relative contribution of the exchange rate policy variable in Nigeria's international economic transactions;

iv) to test empirically the quantum effect of the structural shift in Nigeria's ER policy on the import and export analytical model, and

v) to evolve a study result that will serve as a suitable policy guidance for those responsible for decisions of external trade policy.

1.4 RESEARCH HYPOTHESES

The major hypotheses to be examined in this study are the followings:

i) the effect of real exchange rate (RER) on the performances of the external payment position is significantly different from zero and identical in all external trade sub-sectors;

ii) the FDERS in Nigeria between 1960 and 1985 has negatively affected the external payment position: it encouraged excessive importation and produces a stagnated export production.

1.5 SIGNIFICANCE OF THE STUDY

This study is relevant for the fact that adequate understanding of the problem of Nigeria's external account is one precondition for fashioning relevant policy strategies in the current SAP effort. The Nigerian economy is an open economy. Available data show that the role of the external trade has assumed an increasing proportion of Nigeria's aggregate economic activity and has been a vehicle of dissemination of technology, managerial skill and entrepreneurship. This position is correctly sum up by Fajana as quoted by Oshilim (1988: p.5). "not only has the sector been the main driving force of the economy, its contribution has been a sin qua non to the growth of the economy." We hope, therefore, that the study will be be of value in the current search for a stable external trade and overall growth in the Nigeria economy.

1.6 RESEARCH METHODOLOGY

The theoretical foundation of our analysis will be situated in the paradigm of the elasticities approach to the balance of payments (BOPs). Analytically, the study shall systematically assess the implication of the ER policy measures on the changes in certain key external account variables. Conventional economic indicators such as current account deficits as percentage of Gross Domestic Product (GDP) and exports; months-of-imports equivalent of FOREX reserves; the non-oil exports as percentage of total exports; growth rate of the various components of the external account, etc. are used to assess the goodness of the external account under FDERS and FBERS.

The quantitative, exercise shall be undertaken using a simple theoretical model, in the form of a regression analysis. Regression analysis is a statistical method for measuring the degree of association between two or more phenomena. It is, of all quantitative techniques, the more frequently used, not only in economics, but also in the other Social Sciences. Hence, our regression equation shall be specified to measure the role of RER in the international economic transaction. The model specifications will have the import and export demand variables as the dependent variables while the exchange rate policy variable proximated by RER will along other determinants, assume the role of an explanatory variable. The Net export demand function will, also be specified. This will help us to capture the impart of the RER on the performances of the trade balance directly. The RER in the model argument shall be constructed along the purchasing power parity (PPP) model of an ER behaviour. The reason for the choice of the RER can not be far fetched. According to Omoruyi; (1981), he writes, "the choice of RER (equilibrium ER as defined by the PPP doctrine) is a useful one for policy analysis because the rate represents the equilibrium ER that is conceived in the long-term sense and, hence, the rate that would equilibrate the balance of payments in the medium and long-term, ... and capture the accurate idea of the real changes in the international purchasing power of any given currency". In his own opinion, Edwards (1989) contends that "the most important property of the RER is that it is a good proxy of a country's international competitiveness".

A dummy variable shall be incorporated to capture the quantum effect of the 1986 exchange rate adjustment on the dependent variables. It will assume the value of zero for the period of FDERS and one for the period of FBERS. The models shall be estimated using the ordinary least square (OLS) Multiple regression technique and the estimates shall be obtained by the use of a Time Series Programme (TSP) Computer package. A statistical test shall be performed on the estimated parameters.

1.7 SCOPE OF THE STUDY

The study will cover a period of 1960 to 1989. This period has been chosen for a number of reasons. Firstly, the 1960, as a starting point, coincided with the year of Nigeria political independence. The significance of this rested on the supposition that the country can initiate policy as considered optimal for the local economy as against the colonial era, when Nigeria ER policy measures were a mere extension of the British government economic policy.

Secondly, the period spans across the majors historical epochs in the economic history of Nigeria. Hence, the period was chosen to capture a series of changes in the Nigerian economy.

Lastly, the scope of the study was designed as a duration considered significant to meet statistical and econometric criteria.

1.8 SOURCES OF DATA

The data on the relevant variables used in this research work are time series data and they are primarily secondary in terms of their source. The data sources include the Central Bank of Nigeria (CBN) publications: Annual Reports; the Bullion, and the Economic and Financial Reviews; the Annual Abstract of statistics published by the Nigerian Federal Office of Statistics (FOS), Lagos; the international financial statistics supplement on outputs, prices, direction of trade etc. published by IMF; Nigerian daily and weekly business journals, etc.

1.9 LIMITATIONS

Needless to say, the most common impediment with any research work in LDCS is the limited availability and reliability of statistical data. This study is not an exception. In Nigeria, the inadequacy of quantitative and qualitative data cannot be overemphasized. The conceptual problems and the inconsistent method of compiling such time series data further constitute a major limitation on any serious academic research. Nevertheless, we will assume in the course of this research task that the data will still provide the most convenient and authentic framework in which the consistency of detailed policy decisions could be tested and also the framework for assessing past performances of the economy.

The study is also constrained by the financial stand of the researcher as a full time student. Financial constraints pose serious limitation on the researchers capacity to get assess to

current literature: relevant books, journals, photocopying of necessary materials and computer services required for the good success of the study.

1.10 STRUCTURE OF THE WORK

The study is structured into five chapters. Chapter One embodies the research proposal: introduction, statement of the problem, objectives of the study, research hypothesis, significance of the study, research methodology etc.

Chapter Two covers the review of the existing literatures: definition of concepts, models of exchange rate behaviour, the fixed-flexible rate controversy, alternative approaches to balance of payment analysis and similar empirical studies.

Chapter three is a study on the FOREX rate management in the Pre-SAP period and SAP period. The implications of the alternative ER policies shall be analyzed using the conventional economic indicators.

Chapter four is the empirical chapter. Here, the research models shall be specified and estimated. The results of the findings are interpreted and evaluated.

Chapter five summarizes the findings of the study and their policy conclusions.

CHAPTER TWO

REVIEW AND ANALYSIS OF THE LITERATURE

A useful starting point for a better understanding of this earch work is to consult and review some concepts and oretical relationships in the ER policy mechanism. Effort l also be made to review the alternative approaches to the lysis of ER variation and balance of payments adjustment. iew of similar studies will be undertaken for the purpose of nowledging past efforts and of aiding the ultimate achievement the research objectives.

CONCEPT OF FOREX AND EXCHANGE RATE

Central to the working of an international economic nsaction is the concept of FOREX and exchange rate (ER). The concepts stand crucial because they facilitate an exchange goods and services between two residents of two different ntries.

As an operational concept, FOREX is defined as the amount of eign currencies that a given country will be willing and able hold as reserve in a given period of time given market rate of hange. Hence, Ojo (1990, p.31) defines it as "the monetary et used for the settlement of current international nsactions and for financing imbalances in a country's external ment position vis-a-vis other countries". FOREX is a means, refore, by which the mutual indebtedness of nations is paid and canceled.

FOREX is bought and sold in the FOREX market. The market assumes the medium or mechanism through which the different national currencies could be exchange for one another. Importantly, the FOREX market is a world market, it has no centralized meeting place, nor is it limited to one country or locality. By implication, the market could be conducted through a telephone, newspaper advertisement and of course under a market stall. Depending on the choice of an exchange rate regime, the FOREX market can either be guided/operated by the free interplay of the forces of demand and supply or by a complete administrative control Theoretically, however, in general, if has been posited that to have a stable FOREX market the foreign currency (i.e. US dollar) demand curve must be negatively slopping and it must also be flatter (more elastic) than dollar supply curve at the equilibrium point. Mathematically, the condition can be stated thus:

$$\frac{dDD}{dER} > \frac{dSS}{dER} \quad \text{.....1}$$

where d = small changes, DD = demand for dollar and SS = supply of dollar. The equation 1 proposed that the market is stable as long as an increase in exchange rate (₦/$) leads to a greater decrease in the quantity of dollar demanded than in the quantity supplied. This condition hold even where the dollar supply curve is negatively sloped. Above all, chacholiades (1982: p.122) consented that

"a necessary and sufficient condition for stability in the foreign exchange market is that the sum of the

elasticity of demand for foreign currency plus the elasticity of demand for domestic currency is less than -1" (see Chacholiades, 1982: p.122 for the proof).

Conventionally, the main sources of FOREX to a country include foreign currency receipts from exports of goods and services, inflow of foreign capital such as loans and investments, as well as grants or gifts which represent unilateral transfers. Conversely, the uses of FOREX is the reciprocal of the above mentioned points. It amounts to an interesting point, however, that the sources of FOREX otherwise termed the supply of FOREX into a country means the demand for the domestic currency. Reversely, the uses of FOREX or alternatively termed as the demand for FOREX in a country means the supply of the domestic money in a country against the demand for foreign money (Verghese: 1976).

FOREX is a component of a country's official external reserve which include other things like holdings of monetary gold, the reserve positions in the International Monetary Fund (IMF) and the holdings of Special Drawing rights. Conventionally, in managing the FOREX, it is of crucial importance that they are maintained at a level consistent with the country's current and future commitments and that they are optimally deployed. Though there seems to be general consensus that there is no scientific way of measuring the adequacy of FOREX reserve as it varies between countries and overtime, and would depend among other things on the purposes for which the reserves are held, however, the IMF has consistently used the reserves/imports ratio as a rough indicator of the adequacy of

reserves. Under this consideration reserves equal to the cost of four months imports is considered adequate and this has been more of operational usage over the years (Otiti: 1983, P.11 and 12).

The importance of the adequacy of reserve FOREX cannot be overemphasized because it not only helps to determine or perhaps dictate the choice of the value of the domestic currency but in most cases serve as a sole test of the efficacy of ER policy and the comfortability of the external payment account. More importantly, Otiti (1983) writes, "the maintenance of high level of external reserves/FOREX gives the country room for flexibility and independence in economic policies".

Exchange rate is a price in the FOREX market. It defines the rate at which the different national moneys, exchanges for one another in the FOREX market. Alternatively, it is a rod that measures the value of a national currency in term of another. The role of exchange rates in foreign transactions and payments cannot be over-emphasized, for no international trading transactions between one country and another can be settled without applying an exchange rate between the two currencies. It thus follows that settlement of import bills between the importer and exporter cannot be effected without first of all ascertaining the worth of one currency in terms of the other. In a more serious opinion, Otiti (1983) writes: "even before the question of settlement comes in, the original contract between the two parties (importer and exporter) would have taken into consideration the relationship between the currencies of the importer/exporter countries".

Worthy to mention, however, is that ER is not just one price among other, such as price of BIRO and ORANGE, in the stream of the national resource allocation. It is an important and basic price because firstly, a variation in the ER changes the price of a national money in terms of foreign moneys. It thereby produces instantaneous chances in all markets for exportable markets and importables for domestic goods and services, wages, incomes, interest rates, profit rates etc. Arguably, therefore, ER is a price of overriding importance for any economy. It is, amongst other things, "the link between the price structure of one country and those of all others, and thus between the national economy and the world economy". (Bernstein: 1978:, p.9). Secondly, ER is a price that has almost always been subjected to varying degree of manipulation by economic policy makers. Overtime and space, the different countries have manipulated their currency exchange rates to increase the competitiveness of their tradable goods and, as a consequence, capture foreign market from the rival nations. However, from economic point of view, as posited by Bernstein (1978, p.9), "the ER helps bring about such a pattern of international trade that maximizes the benefit from international transactions and the flow of capital that reflect comparative interest rates and profits".

In sum, ER is a vital instrument of achieving internal and external balance and as a means of establishing a financial and economic hegemony, in particular, in light of an increasingly competitive world. Largely, it is evident from the foregoing that there exists a relationship between ER and external

equilibrium. Such a relationship appear incontrovertible. The question that remains expedient however is what sort of relationship is it that exists? The quest for the answer constitute the central focus of this research task.

Conventionally, ER can be quoted in one of the two ways. The first way, the indirect quote, is to quote one unit of the local currency (i.e. ₦) as equal to some units of the foreign currency (i.e. US $). Symbolically, it can be written as $/₦. The second way, the direct quote, is to quote any unit of the local currency as equal to one unit of the foreign currency. Similarly, it can symbolically be written as ₦/$ (for the analytical purpose of this work, the latter quotation shall be adopted except otherwise stated). However, either of the quotation can be expressed in a nominal or real value. The nominal value is a monetary concept that expresses the relative price of two money units. Namely, it can be expressed as the number of units of one currency that is offered in exchange for a unit of another, i.e. ₦/$. The nominal value can be a spot exchange rate (today's rate for an exchange of currencies n-periods in the future).

The real value of an exchange rate expresses the value of a currency in terms of real purchasing power. In other word, it can be expressed as the relative price of two goods, i.e. relative price of tradables with respect to non-tradables. This rate can be measured in a number of ways. One is the internal price level of tradable goods divided by that of non-tradable goods. Another is the nominal exchange rate multiplied by a foreign price index and divided by an internal price index. A

third measure is the ratio of the nominal exchange to an index of the internal wage rate. In both the second and third measures, nominal exchange rate is the predominant internal variable in determining the domestic prices of tradables, whereas the wage rate is the primary input into services, which constitute the bulk of non-tradables. The first and second measures also approximate each other to the extent that the foreign price index captures the foreign price levels of the country's imported and exported goods, and the domestic price index captures the internal price level of non-traded goods.

For a computation purposes, a more operational definition of the real exchange rate (RER) is the following:

$$RER = \frac{E_o P_T}{P_N} \quad \text{.....1a}$$

where E_o is the nominal ER defined as units of domestic currency per unit of foreign currency, i.e. ₦/$, P_T is the world price of tradables, and P_N is the domestic price of non-tradables. For the purpose of knowledge, it is noted that the RER can be computed inversely, viz

$$RER = \frac{E_1 P_N}{P_T} \quad \text{.....1b}$$

where E_1 is the nominal ER defined as units of foreign currency per unit of domestic currency is $/₦. All other variables assume the same definition.

The relevance of the RER for the analytical purpose cannot be over-emphasized. Levich (1985, p. 984) writes "the real exchange is a useful device for measuring the competitiveness of

domestic goods in international markets, for predicting future changes in trade patterns and for evaluating long-term real investment prospects". Conventionally, a RER appreciation reflects an increase in the domestic cost of producing tradable goods. If there are no changes in relative prices in the rest of the world, this RER appreciation represents a deterioration of the country's international competitiveness: the country now produce tradable goods in a way that is less efficient than before, relative to the rest of the world. Symmetrically, a depreciation in the RER represents an improvement in international competitiveness.

More importantly as argued by Oyejide (1986 p.42) "a RER appreciation would tend to divert resources away from tradables to non-tradables, while a depreciation would accomplish the opposite".

Beside, the concept of RER has remained largely the basis to distinguish two types of devaluation for empirically analysis. The two are nominal devaluation and real devaluation. In brief, while a nominal devaluation defined a fall in the units of foreign currency per unit of domestic currency (\$/₦), the real devaluation is defined as a change in relative price i.e. a decline in RER as operationally defined in equation 1b. From the equation, evidence show that RER depreciation/real devaluation can occur via three principal variables i.e. a fall in E_1, a fall in domestic price level and a rise in the foreign price level. Among the three, it is noticeable that it is only the first two that are internal policy variables. Foreign prices can be assumed given.

Accordingly, this causal factors of RER depreciation naturally leads to the inference that a nominal devaluation will be effective in producing a RER depreciation (improving international competitiveness) only if it is not accompanied by an equiproportional increase in the domestic price level.

In principle, it is no doubt that nominal devaluation could be translated into real devaluation, at least, in the short to medium run. But, empirically, studies have proved that the real effect of nominal devaluation erodes through time until the RER is back to the value it was prior to nominal devaluation or even more overvalued! For instance, Edward (1986b), as reported in Edward (1989), in his analysis of twenty-nine devaluations between 1962 and 1979 proved that after twelve quarters, much or all of the benefits would have been eroded. Edward showed that case that had a large (or complete) erosion of the effect of the nominal devaluation were those that accompanied the exchange rate adjustment (ERA) with expansive credit policies, large fiscal deficits, or wage indexation. Similarly, those cases that experienced only minor erosion usually implemented consistent macro economic restraint.

In his conclusion, Edward quantitatively proved that:

> "if a nominal devaluation of 10 percent is accompanied by an acceleration of the rate of growth of domestic credit equal to 10 percentage points, the resulting depreciation in the RER will be reduced to only 2 per cent in that year. After 2 years the RER will again have become overvalued".

2.2 MODEL OF EXCHANGE RATE BEHAVIOUR

2.2.1 Mint Parity Model (MPM)

Historically, the MPM otherwise called the Gold Standard Model (GSM) was operated prior to the Brethoonwood monetary system of 1945. The MPM strictly demonstrates the determination of ER within the framework of the gold standard. In other word, the MPM is relevant only between the currency units of the countries on the gold standard. By extension, the MPM is relevant to a country when:

a) Officially a legal gold value has been given to its monetary unit.

b) Its currency is freely convertible into gold i.e. its monetary unit stands ready to buy and sell gold at a fixed price.

c) There is a free export and import of gold including export and import for settling international payments.

d) The total money supply in the country is determined by the quantum of gold available in the country for monetary process.

Against this backdrop, the MPM proposed that two currency units which are on gold standard will automatically have a fixed relationship with each other as determined by their gold content. By way of example, as it was in 1914, where British pound sterling was exchangeable for 113.00 grains of pure gold and the US dollar US $) for 23.22 grains, it follows, according to the MPM postulate that the ER between the two currency units will be defined as: 113 ÷ 23.22 = 4.87. The result implies that the equivalent of £1 = US $4.87. Conventionally, the model proposes

that as long as the gold content of the two currency units remain unchanged, the two currency units will have a fixed ER relationship with each other. Nevertheless, it amount to an interesting point to mention that the model permit a marginal deviation from the mint parity but only to the extent of the cost of shipping gold from one country to another including handling charges etc.

Paramount important in the MPM is the inherent automatic adjustment in the BOPs disequilibrium. This important property of the model is made possible only by the peculiar assumptions made earlier. The automatic adjustment property is best illustrated in the classical approach to BOPs analysis, generally referred to as the Humean "price-specie-flow mechanism". By way of illustration, the price-specie-flow mechanism posited that a BOPs surplus would cause an excess inflow and accumulation of gold which will expand the total money supply for the monetary process. Through the operation of the Quantity theory of money, the resulting increase in domestic money supply would result in consequent increase in domestic price levels, including wages and other production costs. This would mean that relative prices in the surplus country would now fall, making their exports relatively more expensive. On the other hand the fall in the relative prices would influence excess importation in the surplus country and hence an outflow of gold until the actual gold content in the country is equal to the desired quantum of gold to be held. The excess importation would wipe out the BOPs surplus and yield BOPs equilibrium. Briefly, a fundamental prerequisite for the automaticity of adjustment is the flexibility of prices.

The degree of flexibility of prices, in turn, is a close functi of the flexibility of the costs of production, notably of labo costs.

Besides the automatic adjustment property of the MPM, th model also yield an easy and encouraging international trade ar investment. This attribute was made possible because of the rol of gold as a world currency and of the established constant valu of the country's exchange rate. Notwithstanding, the goc properties of the MPM as mentioned above, it is a widel knowledge that the model carried a considerable policy problem First, the experience with the gold standard under a relativ rigidity of wages in the downward direction made countries mor and more aware of the apparent conflict between national polic goals and the requirements for external balance. For an example a reduction in the domestic money supply, as a result of balance of payments deficit, tended to produce economi depression (i.e. unemployment) and a corresponding decline ir output rather than an immediate adjustment in BOPs. By implication, the output of a country, as of then, was seriously affected by imbalances in the BOPs. This was particularly true for deficit countries. Hence, the apparent conflicts cause countries to become increasingly unwilling to surbodinate their national policy goals to the requirements of BOPs equilibrium and concomitantly the suspension of their currency from the gold standard. Second, the ER mechanism of the MPM led to widespread

ignorance amongst the policy makers as to what factors determine the actual ER, and how best to govern an ER system. Riechel (1979: p.1) writes:

> "Since gold was the numeraire for all currencies, this policy simultaneously determined all exchange rates between national moneys and rendered them invariably fixed. By so doing, countries chose to ignore the fact that different economic developments among countries would lead to different developments in the purchasing power of national moneys and would, thereby, normally require an adjustment in the relative price of national moneys, i.e., a change in the exchange rate".

Consequent to the weight of sustained structural dislocations and growing unemployment in the capitalist countries in the Great-Depression (1929 - 1933), the practicability and appropriateness of the regulations under which the gold standard operates became challenged and the dramatic shift in opinion led to its eventual collapse and demise in the 1930s. Besides, there began a process of what came to be known as 'demonetisation of gold' and an emergency of a new international monetary order in a regime of flexible exchange rate system.

2.2.2 The Purchasing Power Parity (PPP) Model

This model emerged following the demise of the gold standard. The PPP model appeared as a new base to arrive at the comparison of the values of two currency units and as a theoretical basis for explaining and measuring statistically a country's equilibrium exchange rate after the second world war.

Though as Frenkel (1978) has pointed out, the intellectual origins of PPP can be traced to the early nineteenth century and the writings of Wheatley and Richardo, the term "PPP" is associated with the Swedish Economist, Prof. Gustav Cassel.

According to the model, the PPP between two currency units is defined as that amount of the currency of one country which endows the holder with the same amount of purchasing power, i.e., command over goods and services as would a stated amount of the currency of other country. The model thus posited that an equilibrium rate of exchange between two currency units is determined by the ratio of their respective purchasing power. This rate according to chacholiades (1982) is achieved when "the rate of exchange will enable country A to sell as much as to B as B to A".

An important building block of PPP doctrine is the law of one price, that is perfect commodity market arbitrage of individual goods. For example, if the price of oil in Nigeria is ₦40/barrel, we expect the price in America to be $20/barrel when the exchange rate is ₦2/$. If, on the other hand, the ER is ₦1/$ when the purchasing power of ₦2 is equal to $1, the Nigerian trader can convert say ₦2 to $2, and buy goods in the USA for $1 and bring them over to Nigeria. Sell them for ₦2 and retain $1 as profit. Namely, the ER that gives the domestic resident purchasing power over goods in another country (by buying the foreign currency and using it to buy goods there) than could be obtained at home suggest an overvaluation of local currency and stimulate excess importation. Conversely if the rate is such

that with a given sum fewer goods can be obtained in the foreign country than at home then the local currency is undervalued.

Mathematically, given that the BOPs is at equilibrium and the capital account is assumed away, the main thrust of the PPP model can be expressed thus:

$$Pd = e_o P_f \quad \text{.....eq. A.1}$$

By rearranging e.g. A1 we can write:

$$e_o = \frac{Pd}{P_f} \quad \text{..... eq. A.2}$$

where Pd is the price index in the home country, P_f is the price index in the foreign country, and e_o = ₦/$ (the units of domestic currency needed to purchase one unit of the foreign currency). The eq. A.1 proposes that the rate of exchange between the two countries is determined by the quotient between the general level of prices in the two countries. This imply that if the price level in domestic country (i.e. Nigeria) is ten times as much as the price level in the foreign country (i.e. USA) then one USA dollar would be exchanged for ten Nigeria Naira (₦). (This is the absolute version of the PPP model). By taking the log of eq. A.2 then we can have the linear expression:

$$\text{Log } e_o = \log Pd - \log P_f \quad \text{.....eq. A.3}$$

Take total differential of eq. A.3, we have

$$\dot{e}_o = \dot{P}_d - \dot{P}_f \quad \text{.....eq.A.4}$$

Equation 4 proposes that the rate of change of the exchange rate (e) is equal to the rate of inflation differential between the domestic and foreign countries. Thus, the PPP indicates that the exchange rate should appreciate or depreciate by the

difference between the foreign inflation rate and the domestic inflation rate. (This is the relative version of the PPP model).

Importantly, however, it can be deduced from the above analysis that the PPP model assumes strictly that the determination of the ER is purely a monetary phenomenon.

Though PPP thesis appears attractive and intuitively appealing model of ER behaviour, it nevertheless, suffers serious limitations.

According to Gibson (1978), the problems of PPP arise from the simplifactions and assumptions that have been made to derive it. Nevertheless, he contends that "even if one is prepared to accept the assumptions of equilibrium and no capital flows, the difference in the rate of inflation can be seen only to be merely one of several factors influencing the ER". He lamented "to assume other factors such as changes in relative real income growth; technology; tastes; level of employment, trade impediments - tariffs, transport costs; and capital movement do not occur during the transition period can not be true".

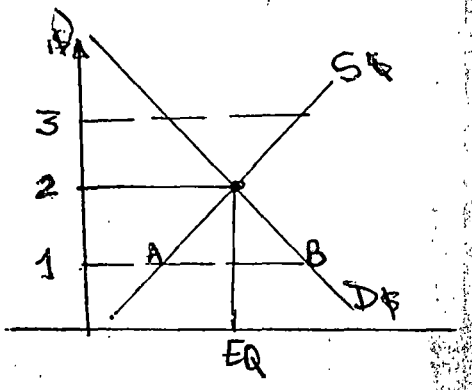
On another plane, Frenkel (1976) has argued that much of the controversy over the usefulness of the PPP doctrine results from the fact that PPP specifies a final, equilibrium relationship between exchange rates and prices without specifying the precise linkages and details of the process. Besides, the PPP was overwhelmingly on the side of the unilateral effect of prices on ERs. Such that they viewed that even if ER deviated from their PPPs, sooner or later they were bound to return to them. This imply that it was always the ERs which adjusted themselves to price differentials. This position is however, considered

skeptical because the causation might run not only from relative inflation to ER but also vice versa. Nevertheless, as Frenkel (1976) concluded, "as prices and ERs are both determined endogenously in the real world, PPP represents an equilibrium relationship rather than a precise theory of ER determination.

2.2.3 The Balance of Payments (BOPs) Theory

The theory is predicated on the familiar argument, based on classical economic theory, that prices are best determined by the free play of market forces. The theory proposes that, in a situation where the authorities do not intervene in the FOREX market at all and the market depicts a "perfect competition" each currency is homogenous, knowledge is widespread among the FOREX dealers and no strategic behaviours in the market, the exchange rate will be determined by the forces of demand and supply of foreign currency. This proposition can be illustrated diagramatically.

1: Market Determined Exchange Rate



S$ = supply of foreign currency i. e. dollar

D$ = demand of foreign currency i. e. dollar

ER = exchange rate (₦/$)

EQ = Equilibrium Quantity

From the diagram above, the equilibrium ER is ₦2 to $1 and it is the rate under which the balance of payments equilibrium is guaranteed. The theory rather suggests that at any other rate, a BOPs disequilibrium surface, namely, at an ER of ₦1 to $1 a BOPs deficit equivalent to AB on the diagram occur. Given the underlining classical postulation, the deficit situation via the forces of demand and supply will trigger-off a depreciation of naira until the equilibrium ER will be achieved. Hence, in all likelihood, unlike the PPP theory, the BOPs theory holds that the rate of exchange equilibrium is determined by international BOPs position which are unrelated to the internal prices and money supply.

By way of inference, the BOPs theory of ER determination can be likened to a flexible exchange rate in which the ER of any country's currency is expected to find its natural level through the forces of demand and supply.

2.2.4 The Monetary Model of ER Determination

The basic monetary model to ER determination is a direct outgrowth of the PPP theory and of the quantity theory of money. While the PPP concludes that the ER is the relative price of goods in the two countries, the monetary model suggests that the ER is the relative price of two moneys. Thus, the monetary model posits that, assuming the neutrality of money, ER behaviour reflects the evolution of the relative demand for two moneys. The monetary model and its variants has been developed by ER economists such as Frankel, Musa, Girton, Rober, Hondrick and Bilson.

To develop the ER equation of monetary model, the model commonly assumes that the money market is in equilibrium:

$$P - P^* = (m - m^*) + (1^* - 1) \quad \text{..... B.1}$$

where P denotes the logarithm of the price level, m denotes the logarithm of the nominal monetary supply, 1 denotes the logarithm of the demand for domestic real balances and where an asterick indicates a variable pertaining to the foreign country.

Second, the model assume that there is a link between domestic and foreign prices through some form of the PPP, the simplest form of which is expressed by:

$$P = e + P^* \quad \text{..... B.2}$$

e denotes the logarithm of the exchange rate, i.e. the price of foreign money in terms of domestic money (₦/$). Using equation B.2 in B.1 yields:

$$e = (m - m^*) + (1^* - 1).$$

This equation reveals that ER behaviour can be denoted in

terms of supplies of domestic and foreign moneys and demands to holds these moneys. Hence, anything that increases the supplies of domestic relative to foreign money or increases the demand for foreign relative to domestic money, raises the ER (i.e. depreciates the domestic currency).

Relaxing equation B.2 and allowing the price level to be a weighted average of the prices of non-tradable goods and internationally traded goods.

$$P = \sigma P_N + (1 - \sigma) P_T \quad \text{..... B.4}$$

$$P^* = \sigma^* P_N^* + (1 - \sigma^*) P_T^* \quad \text{..... B.5}$$

where P_N and P_T denotes respectively, the logarithms of the prices of non-tradable and tradable goods, σ denotes the weight of non-tradable goods in the price index and where, as before, an asterick indicates the foreign country. If PPP holds only for tradable goods, we replace equation B.2 by B.6

$$P_T = e + P_T^* \quad \text{..... B.6}$$

using (B.4 to B.6) in B.1 yields

$$e = (m - m^*) + (1^* - 1) + \sigma[(P_T - P_N) - \sigma^*(P^*_T - P_N^*)] \quad \text{..... B.7}$$

Equation B.7 illuminate the impact of relative price structures in the two economies and proposes that a rise in the domestic relative price of tradable goods raises the exchange rate (i.e. depreciate the domestic currency).

The determination of the real money demand has been specified. The economists commonly represent the demand for real money balances, L as some function of real income, Y, interest rate, i, and other factors, K. A popular specification in the

form of an explicit money demand function can be written thus:

$$L = KY^{n}e^{-\&i} \quad \text{..... B.8}$$

Taking logarithms of equation B.8, we obtain the linear expression:

$$1 = k + ny - \&i \quad \text{..... B.9}$$

where y and i denote the logarithm of income and the interest rate, respectively, and where n and & denote the income elasticity and interest (semi) elasticity of the demand for money, respectively.

Let us assume that the same specification of money demand also applies in the foreign country so that

$$1^{*} = K^{*} + ny^{*} - \&^{*}i^{*} \quad \text{..... B10}$$

Substituting equation B.9 and B.10 into B.7 and assuming for simplicity of exposition that $n = n^{*}$, $\& = \&^{*}$, and $\sigma = \sigma^{*}$, we obtain

$$e = (k^{*}-k) + (m-m^{*}) + n(y^{*}-y) + \&(i - i^{*}) + \sigma[(P^{T}-P^{N}) - (P^{*}_{T} - P^{*}_{N})] \quad \text{..... B.11}$$

The model specified in B.11 assumes that, other things being equal, a rise in the level of domestic income relative to foreign income appreciates the value of domestic currency (reduces e) and an increase in the domestic nominal interest relative to the foreign nominal interest rate depreciates the value of domestic currency (increases e).

The incorporation of the interest parity condition adds further content to the general monetary model of exchange rate determination. Let us assume that:

$$i - i^{*} = II \quad \text{..... B.12}$$

where II denotes the forward premium on foreign exchange (i.e.

the difference between the logarithms of the forward and spot exchange rates). Substituting II for $(i - i^*)$ in equation B.11 yields the prediction that a rise in the forward premium on foreign exchange depreciates the currency (raises e). By implication, the interest rate parity condition helps to estimate the impact of the expected future depreciation of the currency in the current value of the currency. This expression capture the basic tenant of the asset approach to the determination of ER.

So far, the above model has, implicitly, assumed that domestic money is demanded only by domestic residents while foreign money is demanded only by foreign residents. Essentially, the demand for real money has included the domestic interest rate in the domestic demand, and the foreign interest rate in the foreign demand; it has been implicitly assumed that the only relevant alternative for holding domestic money is domestic securities while the only relevant alternative for holding foreign money is foreign securities. Thus, the model has ignore the currency substitution in the formulation of the ER equation.

In principle, however, the domestic residents might demand foreign currency such that the aggregate demand for money is the sum of domestic and foreign components. Hence, demand for domestic money (1) comes in part (λ) from domestic residents and in part $(1 - \lambda)$ from abroad; demand for foreign money (1^*) comes in part (λ^*) from foreign residents and in part $(1 - \lambda^*)$ from abroad. But worthy to note is that the final ER equation would be similar to equation B.11 except the two parameters (λ)

and (λ^*) appear. When residents hold their local currency exclusively, $\lambda = \lambda^* = 1$ the final model will be reduced to equation B.11 [for further exposition, see Girton and Roper (1979)and Calvo and Rodriqueq (1977)].

In conclusion, the monetary approach differs from the elasticities approach to exchange rate determination in that concepts like exports, imports, and so forth, do not appear explicitly as being fundamentally relevant for the understanding of the evolution of the exchange rate. Rather, the relevant concepts relate to three groups of variables: first are those which are determined by the monetary authorities, second are those which affect the demands for domestic and foreign money, and third are those which affect the relative price structures. Above all, the virtue of the monetary approach in comparison with the elasticities approach is in bringing these variables to the foreground rather than leaving them in the "background".

2.2.5 The Portfolio Balance Framework (PBF)

This approach to ER determination is an extension of the monetary model of ER determination. Unlike the monetary model that assumes a limited menu of assets (i.e. currencies) and proposes that assets are perfect substitutes, the portfolio balance framework upholds the belief that assets are imperfect substitutes for each other and among nations. Consequently, the approach expand the list of assets that may be substituted. Namely, the PBF argues that "individuals" excess demand is not for a currency qua currency, rather individuals desire to shift from one set of financial assets (for example naira denominated)

into another set of (dollar denominated) financial assets". (Levich: 1985, P. 1014).

The essential building block of the model are domestic money, M. domestic bonds, B, that earn the interest rate r and are not internationally traded; and foreign issued bonds, F, that earn the fixed interest rate $\bar{r}$. Foreign bonds cannot be traded for M and B. Thus, foreign bonds can only be accumulated through a current account surplus. The asset market equilibrium conditions are given in the following equations:

$$M = m(r, \bar{r})\, W. \quad \ldots\ldots\ldots\ldots\ldots \text{C.1}$$

$$B = b(r, \bar{r})\, W. \quad \ldots\ldots\ldots\ldots\ldots \text{C.2}$$

$$eF = f(r, \bar{r})\, W. \quad \ldots\ldots\ldots\ldots\ldots \text{C.3}$$

$$W = M + B + eF \quad \ldots\ldots\ldots\ldots\ldots \text{C.4}$$

The exchange rate is given by e, and W represents domestic financial wealth.

The PBF proposes that if wealth accumulates (e.g. via current account surpluses) in a country that traditionally prefers foreign bonds (e.g. bonds denominated in dollar), it is likely that the value of the dollar will increase. (For a detail briefing see, Allen and Kenen (1989), Fama and Farber (1979) and Kouri (1976).

Conclusively, the PBF is appealing because it represents a rich setting within which to analyze important real factors affecting exchange rate and yet maintain a tractable model. The model provides a clear link between real factors which affect the current account, the current account itself and the exchange rate. Besides, via the PBF, we can investigate the impact on the

exchange rate of shifts in the distribution of financial wealth across currencies.

CONCLUSION

The foregoing is a theoretical review of the alternative models of ER behaviour. The models are developed roughly in chronological order and in order of complexity and richness. Suffice to say that they collectively prove that the forces affecting ER are diverse and, hence, non of the theories/models is capable and sufficient enough to help singularly to define a correct and realistic ER movements. Besides, the models suggest that an equilibrium ER can only be attained by a permutation and combination of the identities of the established models of ER behaviour. It is important to say, however, that our conclusion do not dispute the fact that some model can independently approximate ER behaviour but it rather indicates that it can be done only with a degree of caution.

2.3 THE CHOICE OF EXCHANGE RATE (ER) POLICY: A THEORETICAL REVIEW

ER policy is a component of macro-economic policy which is critical for FOREX management. By extension, ER policy is situated in "the art of ensuring that the country's available FOREX resources meet the needs of the economy - the issue of adequacy - and that FOREX resources are optimally deployed" (Ojo: 1990, P.32). Suffice to say, therefore, that as cynically expressed by Ojo (1990), "an appropriate ER policy will tend to maintain equilibrium in the outflow and inflow of FOREX in the economy, while an inappropriate ER policy in the form of either

under or over valuation of the currency will tend to create instability in the FOREX market and to perpetuate widespread distortion in international economic transaction, viz external imbalance". In general, Odozi (1986, P.19) writes: "The failure of any country to pursue an optimal ER policy and consequent maintenance of an over-valued currency could cause serious damage to its economic development and social and political stability".

The quest for an optimal ER policy is never a recent exercise. There is, by now, a large and a well-known body of theoretical literature on the determinants of an ER regimes. However, it is not surprising that economic research has not reached an exact ER regime that will, over time and space, provide an overriding optimality. Nevertheless, it is worthy to note that scholars have developed analytical frameworks within which a choice of an ER regime can be determined and specific judgment on the appropriateness of an ER policy adopted can be assessed. Notable along the line is Crockett and Nsouli (1977), Wickham (1985), and Frenkel and Aizenman (1982).

This section will focus on analysis of the alternative possible ER regimes. We hope to draw out their determinants, prospects and likelihood policy implications.

Conventionally, ER policy can be operated in two ways: administratively (otherwise known as Fixed ER policy) or by market orientation (termed flexible ER policy). These two are usually referred to in international economic literature as a major polar case of ER regimes. However, following the 1976 IMF meeting in Jamaica, it became abundantly clear that in between

the two extremes are series of permutations and combinations of the fixed-flexible rates that are permissible and practicable. Hence, ER policy can assume, amongst others, a managed (or adjustable peg) and multiple dual ER system. We shall consider each case in turn, bearing in mind our goals.

2.3.1 Fixed Exchange Rate System (FDERS)

Theoretically, the FDERS is a variant of the price control strategies. It could be defined as "a system under which the government of a country through the central monetary authority pre-determined the ruling nominal exchange rate" (Jin: 1971, P.53). Simpson (1976, P.448) defined it as "a system in which a nation establishes a par value of its currency in terms of a common numeraire, e.g. gold or dollars, and follows whatever policy is necessary to keep its exchange rate at par". Understandably, par values in this system are not allowed to change, even when there exists a disequilibrium in the FOREX market. Traditionally, under the FDERS, the disequilibrium is kept in check by the government policy of "exchange rate stabilization" programme similar to the well known price stabilization programme. Namely, Jimoh (1987) noted:

> "to satisfy the needs of the market without changing the exchange rate, the government supplies additional domestic money in exchange for the excess supply of foreign currency. The foreign currency so obtained is then added to the stock of foreign reserves. In periods when BOP are in deficits, implying an excess supply of domestic currency, the government enters the

market and buys the excess domestic currency with its holding of foreign reserves".

By implication, the stabilization programme supposes the adequacy of the "intervention currencies". Hence, any disturbances attendant upon disequilibrium in the FOREX market are now reflected and accommodated in the fluctuation in the government's holding of "intervention currencies" rather than on the exchange rate. In general, therefore, Roosa (1967, P.38) in a debate with Friedman writes:

> "under a fixed exchange rate system, there is an established sale of measurement, easily translatable from one country to another which enables the merchants, investors, and bankers of any country to do business with others on known terms".

It is conventional wisdom that a FDERS is highly recommended for the LDCs - Nigeria inclusive. For instance, Lewis (1979, P.18) writes: "it is now the conventional wisdom that currencies of developed countries should float, but the currencies of the LDCs should not, that is to say that each LDC should choose a more developed country (MDC) as a partner or special drawing right (SDR) and tie itself in a fixed relationship".

Johnson (1970, P.97 and 98) accounts for the relevance of the fixed exchange rate system to the economy of the LDCs. He writes:

> "One is accustomed to thinking of national moneys in terms of the currencies of the major countries, which currencies derive their usefulness from great

diversity of goods and services, and asset they can be directly converted. But in the contemporary world, there are many small and relatively narrowly specialized countries whose national currencies lack usefulness in this sense, but instead derive their usefulness from their rigid convertibility at a fixed price into the currency of some major country with which the small country trades exclusively or on which it depends for capital investment. For such countries the advantages of rigid convertibility in giving the currency usefulness and facilitating international trade and investment outweigh the relatively small advantages that might be derived from exchange rate flexibility".

Johnson (1970) concluded thus:

"In a banana republic, for example, the currency will be more useful if it is stable in terms of command over foreign goods than if it is stable in terms of command over banana".

Furthermore, experts recommend a FDERS for an LDCs because the instruments of monetary policy are more fragile in the LDCs and because the cost of infrastructural and institutional facilities required for an effective and efficient operation of a flexible exchange rate system are beyond what a LDCs can afford (Jimoh: 1987). The pursuance of the FDERS is, further, considered desirable for LDCs because "it provides a framework within which to organize consistent monetary, fiscal and demand-management policies" (Wickham: 1985, P.62).

Apart from the peculiar relevance of the FDERS to the LDCs, its advantages in general cannot be overly emphasized. Ward (1965: P. 100) writes:

> "the advantage of the fixed exchange rate is the encouragement that the stability in currency values gives to the flow of world trade and investment. Under a fixed rate there is reasonable assurance that when a contract is consummated, fluctuations in the exchange rate will not wipe out any again that might otherwise accrue from the transactions".

Besides, Tower and Willet (1976, P.8) writes:

> "by eliminating exchange rate uncertainty, fixed exchange rate would permit growth of larger, more efficient market for capital as well as goods and services and would free resources previously absorbed in currency conversion on both scores raising the level of real income".

In its practical context, the pursuance of FDERS in LDCs has raised suspects and challenges. Abdullahi (1987, P.59) writes:

> "maintaining exchange rate rigidity in the face of changes in the prevailing economic and financial conditions (especially the level of productivity and costs) can be harmful as it creates distortions in resources allocation, relative prices and income between and within various sectors of the economy".

In particular, critics of the FDERS cum the system of

exchange controls argue thus:

> "the administrative costs of enforcing controls, private costs in trying to evade them or comply with them and other associated real costs are so high that controls serve no useful purpose". Odozi (1986).

Dibua (1990) consented that the implementation of fixed exchange rate system could be a ruse. This is because the implementation could be engulfed in a lot of bureaucratic bottlenecks which in turn could encourage a great deal of corruption. Dibua (1990) added. "the system exhibit a great deal of inefficiency in allocation of foreign exchange since factors other than the merits of individual applications were taken into account".

2.3.2 Flexible Exchange Rate System (FBERS)

The system of flexible rate is the opposite end of the spectrum from permanently fixed rates. Flexible exchange rate system, conceptually, is defined as "the rate of exchange that are determined daily in the markets for FOREX by the forces of demand and supply, without restrictions on the extent to which the rates can move by governmental policies". The case for flexible exchange rates derives fundamentally from the laws of demand and supply - in particular from the principle that left to itself the competitive market will establish the price that equates quantity demanded with quantity supplied and hence clear stock. By implication, the FBERS is sheltered from the government intervention and, hence, the rationale for

stabilization programme in the form of exchange controls becomes unthinkable.

According to Sodertsten (1980, P.331), the flexible exchange rate system works ideally to clear the market. Against this backdrop he contends that "such a system is the best to be adopted because it provides elegant solution to the problem of external sector balances".

Moreso, in his classic work, Ward (1965), commenting on the optimality of the FBERS, writes:

"it insulates the domestic economy from concern over the state of reserves. when reserves are lost in defense of the fixed rate, it is necessary for the country loosing reserves to take restrictive domestic measures to protect reserves and these may retard the country's growth".

In another context, Ward (1965) argues:

> "under a flexible rates, a tendency to disequilibrium expresses itself in a currency depreciation until receipts are brought into equality with expenditures. Under flexible rates, the BOPs and the exchange rate are left to adjust themselves, whereas under fixed rates the domestic economy, prices etc., must adjust to the BOPs.

By implication, it can be deduced from this assertion that unlike the FBERS where the exchange rate performs the role of the shock absorber, adjustments attendants upon external imbalances in the FDERS could be, not only, very sluggish but often very painful.

In another contribution, Johnson (1970) argues on the

usefulness of the FBERS thus:

> "flexible exchange rates are essential to the preservation of national autonomy and independence consistent with efficient organization and development of the world economy".

From the policy standpoint, Mcleod, as quoted by Jin (1971, P. 49), draws a closer look at the relative efficacy of the fixed-flexible exchange rate system. He argues:

> "the main practical difference between a fixed rate and fluctuating rate is that the latter appears to give the local authorities greater control over internal policies. A fixed rate implies that domestic policies must in some measure be subordinated to maintaining the exchange rate, a fluctuating rate allows the authorities to follow more independent policies, but at the expense of loosing control over the exchange rate".

Precisely, the flexible exchange rate proponents contends that the flexible exchange rate system fosters monetary independence through the insulation of the economy from external influences and the removal of BOPs constraints over policies (Poniachek: 1979). This property, however, the economists posited, could be satisfied if only the economy is relatively closed i.e. when the ratio of traded goods to GNP is relatively small.

In practice, however, the relative efficacy of the FBERS has been challenged and demoted. This has been rooted in the low

degree of diversity in the commodities production, inelastic import and export, rudimentary financial market that makes international capital flows relatively non-responsive to interest differentials, and the virtually non-existence of the forward exchange market for the country's currency. In another plane, Todaro (1977, P.317) argues:

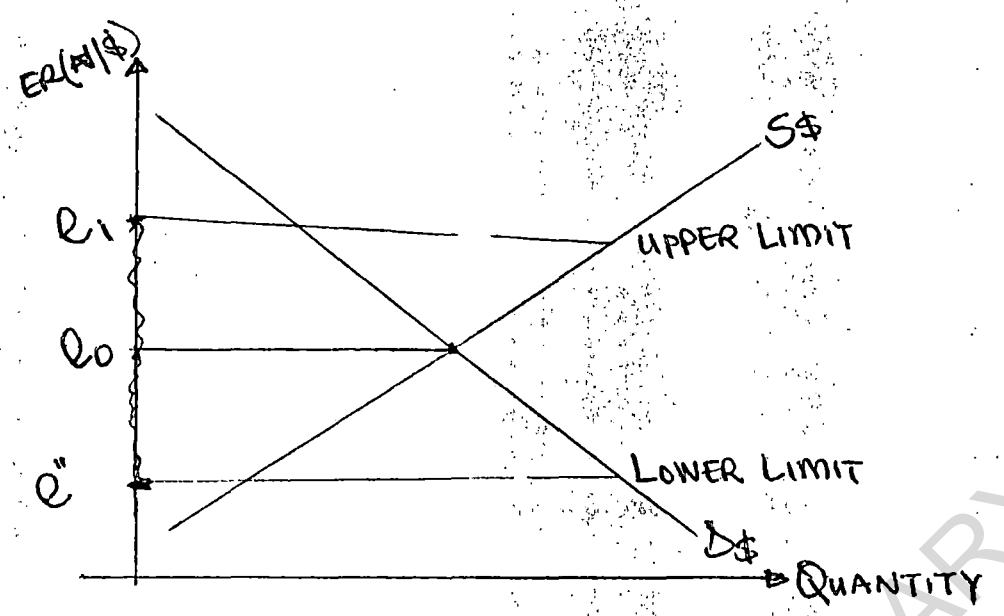
> "flexible exchange rates are not thought to be desirable especially in Third World nations heavily dependent on exports and imports, because they are unpredictable, subject to wide and uncontrollable fluctuations and susceptible to foreign and domestic currency speculation. Such unpredictable fluctuations can wreck havoc with both short and long-range development plan".

2.3.3 The Adjustable Peg System

The adjustable peg has its historical origin in one of the objectives of the IMF, when it was created by the major non-communist nations of the world of Bretton woods, New Hampshire, in 1944. Undoubtedly, the adjustable peg was designed to tap the advantages of both the fixed and flexible exchange rate system.

Consequently, the adjustable peg system is a system whereby the FOREX rates are allowed to fluctuate between a pre-determined upper and lower limit on either side of its equilibrium value. Namely, the system posits the movement of an exchange rate but like a 'snake in the tunnel'. This can be illustrated geometrically:

Fig. 2: Intervention Band of a Fixed Exchange Rate System



Where ₦/$ = e = exchange rates

From the above diagram, the equilibrium exchange rate is determined at point e_o. Nevertheless, the system allows for the possibility of limited flexibility and adjustment in the exchange rate parity when a country's BOPs is in fundamental disequilibrium or to reflect the nation's trends of 'Productivity growth and internal cost push inflation'. Besides, the system permit the government to use both monetary and fiscal instruments to put the short-run market determined equilibrium rate at a level perceived by the monetary authorities to be the long-run equilibrium value whenever the short-run market determined rate deviates from the desired level (Jimoh: 1988, P.5). The adjustment, however, is guarantee only to the extent of the difference between the upper and lower limit called the intervention band. Prior to the meeting of the IMF countries

held in the Smithsonian institution in Washington in 1971, the margin by which exchange rate can float up or down on either side of the exchange parity was at 1%. But consequent to the meeting the margin was widened to 2.5%. Fluctuation beyond the margin was, however, left to be determined by a country but at the mercy of the IMF.

Admittedly, the system allowed that as soon as the rate threatens to get above or below the pre-determined margins, the authorities can take action to 'support the rate'. The Central Bank enters the FOREX market when the exchange rate reaches the lower limit and offers to buy as much of its currency at that price as traders want to sell so as to prevent the currency from falling below the lower limit. And vice versa at the upper limit. Importantly, however, at the emergence of inadequate intervention currency, the IMF made a provision for the member nation to draw on their quota for the necessary intervention process.

Though, the system has been criticized on a number of grounds: it lacks both the stability and certainty of the FDERS and the flexibility of the FBERS. It is on record, however, that it is the only system that best capture the contemporary exchange rate relations amongst the nations of the world.

2.3.4 Dual Exchange Rate System (DERS)

The DERS is a modern choice of an exchange rate system. It has grown to occupy a prominent place in the policy discussion among the academicians and policy makers alike. In practice, it has been used extensively as a variant of exchange rate

adjustment measures.

Conventionally, the DERS exhibits a segmented FOREX market (usually the first-tier and second-tier FOREX market). By implication, the system allows the FOREX market-cum-external economic transaction to experience two different rate of exchange concurrently. Methodological, the external economic transactions were classified into different market according to their necessity and priorities in the national economic growth process. Transactions that were identified as being of high priority are classified under a favoured rates while those categorized as low priority items are grouped under a less favoured rates.

Traditionally, the DERS is generally designed to achieve a number of economic objectives. The main points enumerated below are summarized from Osagie (1988). The DERS objectives include:

First, for countries with inappropriate exchange rates, the DERS, providing as it does relatively the market conditions is expected to yield appropriate exchange rates. The interplay of market forces, it is argued, would produce such rates which in turn help the country concerned adjust external imbalances. Second, the system is expected to encourage a more optimal use of resources as transactions are made to pay prices reflecting relative scarcity. This is expected to promote economic efficiency. Third, although the segmentation of the FOREX into two is governed by criteria which are the result of the value judgment of policy makers, the segmentation allows a number of transactions deserving a special treatment to be catered for. In practice, the system institutionalized the act of taxing certain

less favoured transactions while subsidizing the favoured transactions.

Analytically, several variants of DERS are conceivable. It is analytically conceivable for the system to operate fixed exchange rate systems in both the first and second-tier markets a double fixed DERS (FDERS). Similarly, it is equally conceivable to operate a double flexible DERS (F'F'DERS). Also, conceivable is a fixed first-tier exchange market (FF'DERS) or vice versa (F'FDERS). Besides, the aforementioned variants, the fixed or flexible rates can be administered under an adjustable peg or managed float system.

Historically, the DERS has been operated in a number of countries - both developing and developing countries. It is relevant to note that most of the developing countries (i.e. Cote d'Ivoire, Jamaica, Uganda, Zaire and Zambia) that have adopted DERS did that for the purpose of correcting BOPs disequilibrium (deficits in all cases). On another place, DERS has been adopted, in particular, in the developed countries (i.e. France, italy) in the hopes "to delink the real economy from the effects of unstable international capital flows while at the same time protecting their foreign trade from exchange rate fluctuation" (Jimoh 1987 and Edwards: 1989, P.9). In their DERS experiments, France and Italy operated a flexible exchange rate system in all capital account transactions and fixed rates for commercial transactions. Ironically, however, history indicates that DERS experiment in France and Italy was later abandoned for a uniform flexible rates. The reason is because, apart from the fact that the system does not completely insulate their domestic economies

from foreign disturbances, the administrative problems associated with the process of separating truly capital transactions from commercial transactions was very high and uneconomical. In the LDCs, record equally indicates that the DERS did not achieve very much: in that it did not reverse the BOPs disequilibrium but rather exhibits discriminatory practices that tends to engender social-economic dislocations.

CONCLUSIONS

The foregoing debate tends to reveal the central issues in the determination of an exchange rate regime. Our review has helped to establish, foremost, that each of the exchange rate systems chosen and adopted has a potential but diverse implications on the performance of domestic economy-cum-the structure of external payment position. Secondly, and most importantly, our review help to know that the determinant(s)/choice of an exchange rate policy is not a one to two variables prediction. Rather, the choice of an exchange rate policy rests crucially on a number of variables among which are the stage of the country's economic development, the level of composition of trade and the relative weight attached to the macro-economic objectives. Hence, we recognize that, on a global scale, the choice of an exchange rate regime is a relative concept that depends on the relative openness of the individual economy and monetary sector in particular. Lastly, our review helps to appreciate the fact that in a particular country/economy the choice of any exchange rate regime is not immutable. When

there are changes in the variables that affect the choice of an exchange rate policy (in particular the relative weight attached to the macro-objectives), the ruling policy of exchange rate may also change.

In the next section, however, we hope to review the alternative analytical approaches to the study of impact effect of the exchange rate adjustment on external payment position. Notable along the line is the elasticities, absorption and monetary approaches.

2.4.0 EXCHANGE RATE ADJUSTMENT AND EXTERNAL PAYMENT POSITION: THE ANALYTICAL APPROACHES

2.4.1 The Elasticities Approach

The elasticity approach focuses on the reaction of BOPs to an exchange rate adjustment, i.e. devaluation. The elasticities approach posits that the effect of a devaluation, which is defined as a process by which the value of the domestic currency is lower in relation to the value of the foreign currency, is to raise the local price of imports while foreign prices remain the same and reduce the foreign currency price of exports. Accordingly, devaluation may occasion switches in demand of local residents away from imports towards domestically produced substitutes and the demand of foreigners towards locally produced goods. There will, therefore be a tendency to reduce domestic absorption for both exports and imports thus liberating more export capacity to supply foreign markets.

Predicated on the definition that ER determines prices of traded goods, the elasticities approach emphasizes that the

success of devaluation will depend directly on the sensitivity of the trade balance to changes in relative prices. This sensitivity is specified in the Marshall-Lerner (ML) condition that is commonly used in the analysis of devaluation.

Assuming both an initially balanced trade position and infinite elasticities supply based on mass unemployment, the M-L condition states that a devaluation will improve the balance of trade if the sum of the elasticities for a country's exports and of its imports is greater than unity. If we want to express this condition in terms of a formula, it can be set out as follows:

$$dB = K(XP_x(\eta x - 1) + MPm\,\eta m) \quad \text{..... D.1}$$

where: dB = change in the balance of trade

K = percentage depreciation

X, M = Volume of exports and imports respectively

Px, Pm = price of exports and imports respectively

$\eta x, \eta m$ = export and import elasticity of demand respectively

(for the derivation of the above equation, see Soderstein: 1980, P. 364 - 366). Assuming that the trade was originally balanced, equation D.1 reduces to:

$$dB = K.XPx\,(\eta x + \eta m - 1) \quad \text{..... D.2}$$

It is easy to see from expression D.2 that the sum of the two critical elasticities has to be larger than unity for the trade balance to improve because of a devaluation. suffice it to say that the larger the sum of the elasticities the more sensitive the reaction of the trade balance to devaluation and the better for a successful devaluation.

Principally, the value of the demand elasticities of imports

depend on what type of goods the devaluating country imports. If the country primarily imports necessities, raw materials and goods needed as inputs for its industries, and possesses a weak import-competing industries; the demand elasticities may be very low. Similarly, the demand elasticities for a country's export depend on the type of goods the country exports as well as the export market conditions: the willingness of the rest of the world to absorb exports from devaluing country. a low demand elasticities of imports and exports (where the sum is less than unity), however, suggests that an appreciation instead of devaluation would be efficient means to cure a deficit in the trade balance (Soderstein: 1980, P. 362).

Worthy of mention is Hanson (1983) who reported that as a rough approximation, the following condition would be required for a devaluation to be contractionary:

$$\eta_m < \frac{M - X}{M} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \text{D.3}$$

where η_m is the price elasticity of demand for import and M and X are the nominal values of imports and exports respectively. Thus, he holds the opinion that, if exports amount to 70% of imports, the elasticity of demand for imports would have to be less than 0.3 for a contractionary effect. Otherwise, [where η_m > 0.3) devaluation would be import expansonary (for an elaborate proofing, see Hanson (1983)].

The critics of the elasticities approach have proposed that the approach is not only a partial equilibrium analysis but only relevant for a short-run period. They further contend that the elasticities approach is grossly inadequate to account for a

successful devaluation in an economy with full employment or experiencing structural rigidity in production sphere. it was these criticisms amongst other that gave birth to the absorptionist approach to the analysis of devaluation.

2.4.2 Absorption Approach

The absorption approach gives a useful complement to the elasticities. It was developed after the Second World War by Sidney Alexander (1952). As mentioned earlier, it was developed in response to the inability of the elasticities approach to account for the success of a devaluation in a full employment economy. Primarily, the approach draws attention to the importance of a country's aggregate income and expenditure rather than confining to a country's quantitative economic relations with other economies (Riechel: 1979, P.5).

As its starting point, the approach viewed the balance of trade as the difference between the flow of income of an economy and its expenditure. Thus, an excess flow of expenditure will generate balance of trade deficit and vice versa. In this connection, we can define, mathematically:

$$B = Y - E \quad \text{.....} \quad \text{D.4}$$

where B = Current account (export - imports)

Y = GDP (output)

E = Expenditure/absorption (A)

The capital account is usually ignored in this analysis.

Alexander proposes that devaluation effect the trade balance by affecting real national income and by affecting total

expenditure or absorption. Thus, it was asserted that a devaluation, if it is to succeed, requires an adjustment in either or both of these two variables: to reduce absorption relative to output (expenditure reducing policies), or to increase output relative to absorption (expenditure switching policies) or possibly to employ some combination of the two alternatives.

Differentiating expression D.4 totally:

$$dB = dY - dA \quad \ldots\ldots\ldots\ldots\ldots\ldots \quad D.5$$

The change in absorption (dA) can be decomposed into two parts. First, a change in income induces a change in absorption. Where C is the factor of proportionality. Second, devaluation has direct effect on absorption (D). This occurs via the direct impact of devaluation on the domestic price level. For instance, an increase in the domestic price level attendant upon devaluation would reduce the real cash balances and reduces absorption. Symbolically, the decomposition can be expressed thus:

$$dA = cY + D \quad \ldots\ldots\ldots\ldots\ldots \quad D.6$$

combining expression D.6 with D.5 gives:

$$dB = (1 - c)Y + D \quad \ldots\ldots\ldots\ldots\ldots \quad D.7$$

Expression D.7 is useful because it directs attention to three basic factors important for the outcome of a devaluation. The absorption approach postulates that the effect of a devaluation on the trade depend first, on how devaluation affects real income; second, on the propensity to absorb (c) and; third, on the effect of direct absorption (D). Evidently however, the approach indicates that C must be less than unity for a positive

effect of devaluation on trade balance. If c is greater than unity as it is generally the case in LDCs - Nigeria inclusive, devaluation could have a negative effect. Besides, Ahmed (1986) indicates further that "the consumption contraction effect of devaluation could be derived sufficiently if only devaluation could redistributes income from groups (such as workers) with a low propensity to save to groups (such as owners) with a high propensity to save".

on another plane, the absorptionist model work out an extension to the elasticities approach. Recallingly, the elasticities approach had postulated that for a devaluation to improve trade balance, the sum of the demand elasticities for export and import must be greater than unity. But, unfortunately, the approach failed to indicate by how much must the sum be higher than unity? In this context, the absorptionist, whose main argument is contained in the so called Harberger condition, states that for a meaningful devaluation the sum of the two critical elasticities must be greater than unity plus the sum of marginal propensities to export (Mx) and imports (Mm) in the devaluing country. Symbolically, the Harberger condition can be written thus:

$$x - m > 1 + Mx + Mm \quad \ldots\ldots\ldots\ldots \quad D.8$$

Equation D.8 proposes that though the M-L condition may be necessary for a successful devaluation, it may not be sufficient. This is because the M-L condition denotes only the price effect of devaluation hence neglecting the income effect (Chacholiades: 1982, P.149). Harberger condition concludes that if a

devaluation is to be successful, under M-L condition, the favourable price effect must outweigh the unfavourable income effects or otherwise devaluation would be unsuccessful. In conclusion, the absorptionist, above all, posits that, in particular in a situation of full employment it is possible to improve trade balance by devaluation only if devaluation is accompanied by contractionary financial policies: designed to release resources engaged in production for the home market.

2.4.3 The Monetary Approach

The monetary approach to the BOPs is essentially an application of monetary analysis to international economics. Namely, the approach views devaluation, first and foremost, as a monetary phenomenon. As a building block, the approach assumes that the money supply function is exogenously determined and that the demand for money function is stable. Principally, the two functions formed the central theoretical relationships around which monetarist analysis of the BOPs rested.

Starting from a position of external equilibrium, the monetary approach proponents postulate that a devaluation of the home currency raises local prices, primarily because the local price of traded goods rise, and secondly because the prices of non-traded goods also rise as some local demand is diverted to them. A rise in local prices attendant upon a devaluation causes a decline in the real values of people's monetary balance and financial asset. Accordingly, a reduction in money balances in the local economy induces a reduction in expenditures on goods (imported or local) as people attempt to restore the real value

of their monetary balances via a rise in demand for money (hoarding). As a result, the devaluing country develops a balance of trade surplus.

Similarly, the monetarist indicates that devaluation causes a reduction in the foreign prices of exports of the devaluing country. By implication, the reduction in export prices attendant upon devaluation causes dishoarding and stimulate the foreign demand for the exports of the devaluing country. This experience would boost the revenue accruing to the devaluing country and intensify the BOPs surplus.

On another plane, the monetary approach contemplate that a rise in the local prices attendant upon devaluation leads to a rise in the internal rate of interest above those of other countries. By implication, the resultant interest rate differential encourages the inflow of external funds in the form of investments which consequently improves the capital account cum BOPs account.

In summary, though the monetary approach looks general and systematic, it nevertheless, suffers serious limitations. For one thing, even if one is ready to accept the exogenity of monetary supply assumption, the stability assumption of the demand for money leaves much to contend with. Empirically, economists have proved beyond doubt that the demand for money function is not stable. In particular, the assertion is more pronounced in the LDCs.

CONCLUSION

A study of the three approaches to devaluation reveal that the approaches complement each other. Nevertheless, they represent different ways of looking at devaluation. The elasticities approach starts from partial equilibrium analysis (relative price effect) and emphasizes that, for a successful devaluation, the sensitivity of the import and export to exchange rate variation (devaluation) must be greater than unity. The absorption approach emphasizes the fact that given proper (that is high enough) elasticities, the success of a devaluation (when a country is at full employment) will depend on the ability of the government to bring about a reduction in absorption through appropriate domestic measures. The monetary approach brings out a mechanism through which devaluation induces a reduction of expenditure relative to income and how devaluation leads to an improvement in the capital account of the BOPs account. Thus, unlike the other approaches that ignored the capital account, the monetary approach lifts the capital account from the background to the foreground.

As already stated, the elasticities approach shall be adopted in this study. This is because of the limited information and data that may hinder the application of other approaches. And moreso, of the three known approaches it is only the elasticities approach that is more/easily amenable to quantitative techniques.

2.5.0 SIMILAR STUDIES

2.5.1. Import Demand

The role of exchange rate and many other explanatory variables on import demand have been analyzed by many distinguished scholars and economists. In all the relevant studies the role of ER has been captured by the conventional definition of an ER, viz the relative price. Notable along the line is Olayide (1968), Ajayi (1975), Kincald (1984), Ozo-Eson (1984) and Jimoh (1988).

Except for the work of Kincald (1984) that was directed at the Indonesian economy, all the studies reviewed were carried out on the Nigerian economy. Moreso, except for the work of Ozo-Eson that adopted a "monetarist" approach, the theoretical basis of all the import demand analysis falls broadly into what is generally referred to in economic literature as the Keynesian (or elasticities) approach. With this approach, for instance, aggregate imports are posited to depend on aggregate income and the relative price of imports to domestic price ((Pm/P) as in eq. E.1

$$M = F(y, Pm/p, U);\ Fy>0,\ FPm/p < 0. \quad \text{..... E.1}$$

where M is the real value of import, y is some concept of real income, Pm is import price index, P is domestic price index and U is the vector of other variables captured in the error term.

In his econometric analysis of import demand for Nigeria, Ajayi (1975) estimates the factors that are important in the determinant of retained import (RI) in Nigeria for the period of 1960 to 1970. Retained imports is defined as gross imports adjusted for re-exports. He assumed that:

$RI = f(y/p, Pm/p, FER)$ E.2

re FER = foreign exchange reserves.

To facilitate the discussion, the specific forms of Ajayi's dy are reproduced:

inear: $RI = \&_0 + \&_1 y/p + \&_2 Pm/p + \&_3 FER$ E.3

-linear: $\log RI = B_o + B_1 \log y/p + B_2 \log Pm/p + B_3 \log FER$...E.4

Importantly, Ajayi introduce some dynamism into the model ough the introduction of behaviour out of equilibrium. The cification incorporates a stock adjustment mechanism which is quently employed in empirical work on the short-run demand for ey among others (see White, W.A. (1981) for a concise review its use in such circumstances). Hence, Ajayi stock adjustment hanism for the RI was defined as: the change in RI ($\triangle RI_t$) is ated to the difference between the demand for RI in year t $_t$) and actual RI in period t - 1 (RI_{t-1}). Symbolically, it be expressed as in E.5:

$$\triangle \log RI_t = \sigma(\log RI - \log RI_{t-1}) \quad \text{..... E.5}$$

coefficient $(0 \leq \sigma \leq 1)$ is interpreted as the speed of ustment. It is assumed speedy when $\sigma = 1$ and vice versa if 0.

stituting E.4 into E.5, he derived the equation for the actual ort in year t.

$$RI_t = \sigma\beta_0 + \sigma\beta_1 \log y/p + \sigma\beta_2 \log Pm/p + \sigma\beta_3 \log FER + (1 - \sigma) \log RI_{t-1} \quad \text{..... E.6}$$

re all variables are as earlier defined.

Ajayi's work was carried out on a highly disaggregated iables. The disaggregation was in line with the eight SITC

section in the Nigeria import series. The disaggregation was done according to him, "to have a better insights into the structure of imports".

The equation E.6 was estimated and upon the strength of the result Ajayi concluded that the sign of the relative price conformed with the "a priori" expectation and that RI have a very high price elasticity. The speed of adjustment (δ) was found to be statistically not different from one, thus implying that the demand for RI is a flow variable and do adjust to their desired levels within a year.

Similarly, Ozo-Eson (1984) undertook a study on the demand for Nigerian imports (1960 - 1979). But unlike the Ajayi, Ozo-Eson formulated an alternative theoretical framework for the analysis of import determinants. A monetarist model of import demand analysis was developed. The study was predicated on the assumption that the exclusion of money market variable from the import demand function (as Ajayi (1975) did) will lead to biased estimate of the traditional Keynesian elasticity of import demand. Besides, the study contends that Ajayi's study become controversial if the major source of import disequilibrium resided in disequilibrium in the money market. Thus, he concluded that an effective policy initiated other than the source of disequilibrium will fail.

For simplicity of exposition, Ozo-Eson posited that Real Import (RIM) depends on real income (Y), the relative price of imports (Pm/p) and the excess supply of real money balances ($EX^{S}m$).

$$\log RIM = b_o + b_1 \log y + b_2 \log \frac{Pm}{p} + b_3 \log EX^{S}m \quad \ldots\ldots\ldots\ldots\ldots \text{E}$$

Excess real money supply is:

$$\log EX^{s}m \equiv \log M^{s} - \log M^{d} \quad \text{..... E.8a}$$

where M^{s} and M^{d} are respectively real money supply and short-run real money demand. The log-run demand for real money balances is:

$$\log M^{*} = a_{o} + a_{1}\log y,\ a_{1} > 0 \quad \text{..... E.8b}$$

However, he argued, in the short run real money holds adjust to the long-run desired levels by the following adjustment mechanism:

$$\triangle \log M^{d} = \lambda(\log M^{*} - \log M_{t-1}) \quad \text{..... E.9}$$

$$0 \leq \lambda \leq 1$$

substituting E.8b into E.9 and arranging the terms gives:

$$\log M^{d} = \lambda a_{o} - \lambda a_{1}\log y + (1 - \lambda)\log M_{t-1} \quad \text{..... E.10}$$

substituting E.10 into E.8a then into E.7 gives

$$\log RIM = (b_{o} - b_{3}\lambda a_{o}) + b_{1} - b_{3}\lambda a_{1})\log y + b_{2}\log Pm/p + b_{3}\log M^{s} + (\lambda b_{3} - b_{3})\log M_{t-1} \quad \text{..... E.11}$$

Equation 11 is the derived reduced form of the import function. The reduced form in E.11 was estimated in the following form:

$$\log RIM = \alpha_{o} + \alpha_{1}\log y + \alpha_{2}\log Pm/p + \alpha_{3}\log M_{1} + \alpha_{4}\log M_{t-1} + \alpha_{5}WAR \quad \text{..... E.12}$$

$$\alpha_{1} > 0,\ \alpha_{2} < 0,\ \alpha_{3} < 0.\ \alpha_{4} > 0,\ \alpha_{5} < 0.$$

where WAR - war dummy variable.

In the final analysis the reduced form was estimated using the cochrane-orcult method. The method was adopted because the OLS estimates had indicated some degree of autocorrelation in all

the equations reported. Ozo-Eson study reveals that all the coefficients have the expected signs and all are significant (expect the coefficient of y) at the one percent confidence level. The result, most importantly, proved that the demand for imports is elastic with respect to the relative price. This result follow the same pattern with the Ajayi's study research conclusion.

However, a critical review of the existing studies reveal some notable shortcomings. These shortcomings relate specifically to the specification procedure.

First, the inclusion of the FER and Y and, excess supply of money balances and real income in the Ajayi and Ozo-Eson models respectively seem to pose the potentiality for multi-collinearity in the model. Theoretically, it is clear that there exists, particularly in a fixed exchange rate regime, a direct relationship between the level of foreign exchange reserves and the money supply, and moreover, under the quantity theory, there exists a direct functional relationship between money supply and the level of income. Hence, we tend to posit that the inclusion of all the aforementioned as explanatory variable in the same equation tends to inject an element of multi-collinearity into the Ajayi and Ozo-Eson models. Multi-collinearity, theoretically, tends to enlarge the standard error of a regression equation and make difficult the computation of the statistical significance of the parameters in the estimated equation. Perhaps, we will conclude, therefore, that the Ajayi's and Ozo-Eson's models carried a problem that casts a shadow on the validity of the results obtained.

Second, the aggregation bias was observed to be acute in the Ozo-Eson's model. The model seems to have wrongly presumes that the taste and budget of the demand for imports in all commodity categories are homothetic and identical. This, we contend, is too restrictive and highly unrealistic in developing nations - Nigeria inclusive, which is striving to achieve a rapid economic growth. From theoretical point of view, we posit that Ozo-Eson's study involves the aggregation problem of biased elasticity estimates made famous by Orcutt (see Orcutt, 1950 and Learner and Stern, 1970). We believe, therefore, that the conditions that influence demand for Nigeria import will be very likely vary from one commodity to the other, it would have been more logical to estimate the individual import demand function for each tradable commodity.

2.5.2 Export Demand

There are five major studies on Nigeria's export demand function: Olayide (1968), Olayide and Olatunbosun (1970), Oni (1978), Owosekun (1980) and Aigbokhan (1988). Amongst the studies it is only Aigbokhan that incorporates exchange rate as an explanatory variable in the export demand function. The following model was used in the study:

$$EX = f(ER, Pd/p_w) \quad \text{..... F.1}$$

where Ex = exports, ER = exchange rate, Pd = domestic price,

Pw = world market price proxy by the London Cocoa Market prices.

The above function was specified in a log form and estimated

for cocoa exports of Nigeria for the period, 1968 - 1980.

As the result shows, the ER did have a negative impact on cocoa exports and the ER coefficient is statistically significant. Aigbokhan thus concluded that the appreciation of the exchange rate did had a negative effect on agricultural export. This has implication not only on employment and income growth, but also means the loss of potential FOREX earnings to supplement earnings from the oil sector.

The critique of the study cannot be far fetched. Importantly, the study assume that the demand for exports can be proximated by the actual exports in a particular-year. This imply that the study had assumed away the frequent lags in the international economic transactions. In a more critical way one would have expected Aigbokhan to introduce a stock adjustment mechanism into the model to capture the speed of adjustment of the actual exports to the demand for exports.

In conclusion, we hope to model our import and export demand function along the existing studies' approach in particular, along the elasticities approach. We shall also attempt to relax the shortcomings of the existing studies so that our final conclusion will be more relevant to the real working of the Nigerian economy.

CHAPTER THREE

3.0 THE ADMINISTRATION AND APPRAISAL OF EXCHANGE RATE POLICY IN NIGERIA: 1960 - 1989

INTRODUCTION

In this chapter, effort will be made to discuss, historically, the profile of the Nigeria's exchange rate policy and the exchange rate policy measures. Amongst other things, we will examine the underlying assumptions in the administration of the ER policies. More specifically, achievements and the implications of the ER policy in correcting Nigeria's external payment imbalance shall be emphasized.

The chapter will be broken down into two sections. The first section shall discuss issues in the Nigeria's fixed exchange rate regime spanning 1960 to mid-1986. The structural implications of the regime on the Nigeria external payment account shall be appraised. The second section will embody the issues in the market oriented ER policy adopted in the context of SAP. The extent of the SFEM in resolving the crisis of the Nigeria's external payment account shall also be investigated.

3.1 NIGERIA'S EXCHANGE RATE POLICY: PRE-SAP

In Nigeria, between 1960 and mid-1986 when SAP was adopted, the history of the ER policy is noted to be "managed" or "administered". During this period, the FOREX operation department of the Central Bank of Nigeria (CBN) largely defined the ER value of the domestic naira currency. By implication, the

ruling rate of exchange was such that was alienated from the working of the forces of demand and supply of FOREX resources. Besides, statistics indicate that "managed" ER policy yielded a fairly stable naira ER value. As statistics show, the Nigerian economy experienced a naira ER that ranges between US $1.400 to US $1.8277. Similarly, the stable nominal ER was noticeable for all currency of the Nigeria's trading partners (see Appendix 1).

Traditionally, the "administered" ER policy is a typical variant of a fixed exchange rate system (FDERS). And in the literature the FDERS is known to be pursued, among other things, to preserve the value of the FOREX reserves and maintain a stable ER value of the local currency. Nevertheless, apart form the traditional functions of the FDERS, in Nigeria, the choice of a FDERS has been made to pursue some specific goals. Overtime, it has been designed as an impetus to the centralization and optimal deployment of FOREX resources, the import substitution industrialisation (ISI), financing the public investment programme, reduce inflationary spiral, and in particular, to the pursuit of a stable and sustainable external payment position.

Conventionally, as a consequence of an application of a FDERS, a supportive policy measure(s) is inevitable. Hence, following the Nigeria's FDERS, several instruments were made to manage the country's available FOREX resources. Namely among the instruments are: the policy of exchange controls, portfolio diversification, administrative controls, and a premutuation and combination of fiscal and monetary policy measures. However, despite the alternative options noted, the effort of the monetary authority has been largely resided in the use of an exchange

control measure in FOREX management.

Conceptually, exchange control "is a mechanism by which a country seeks to mobilise and centralise its FOREX resource and ration such resources for the settlement of international transactions in accordance with priorities of the country" (Ahmed: 1985, p.2). The control can take many different forms including exchange licence or blocked exchange, bilateral trade agreements, rationing of FOREX, exchange auction, state trading and multiple exchange rates. Depending on the severity of the external payment imbalance, a combination of the various forms of exchange control systems can be applied to deal with the payments problem. In any format, however, it is incontrovertible that the use of the exchange control is regarded as a demand-management measure that is highly restrictive.

In Nigeria, the use of the Exchange Control has been quite revealing. Inspite of the variations in its restrictive practices, the objectives of the exchange control policy have remained stable. The objectives include:

(a) Improvement of the balance of payments position and maintenance of level of reserves consistent with external stability;

(b) Maximisation of foreign exchange receipts from all available sources;

(c) Optimal utilisation of foreign exchange resources, and

(d) Enhancement of confidence in the external payments system in Nigeria by honouring international obligations subject to satisfactory documentation.

It amount to an interesting point to know that the practice of the Nigerian exchange control policy has been dictated by circumstances and exigencies as they existed. Accordingly, the basic approach to the application of the exchange control has been to make the controls more stringent in periods of severe pressure on the reserves and to liberalise them when the reserves are more buoyant. Consequently, the following years: 1967 to 1971, 1977 to 1979 and 1982 to the beginning of SAP in mid-1986, have been identified as periods of stringent controls. And the period between April 1972 to March 1977 and April 1980 to November 1981 have been characterized by liberal controls.

Largely, therefore, the review of the Nigeria's pre-SAP exchange rate policy and its implications on external imbalance shall be critically done in the context of the relevance of the exchange control in the external payment adjustment process.

3.1.1. THE ADMINISTRATION OF EXCHANGE CONTROL MEASURES IN NIGERIA: 1960 - 1986

Although the focus of this sub-section is on the exchange control measures from 1960 to 1986, it is logical to begin by casting a retrospective look at the exchange control regulations prior to the Nigeria political independence in 1960.

Historically, the origin of exchange control regulations in Nigeria can be dated back to 1939. As a former British colony, Nigeria was subjected to the defence regulations of 1939 which imposed exchange controls on the United Kingdom (UK) at the beginning of the world war II. The 1939 exchange controls

regulation was later supplanted by the exchange control ordinance of 1950. The ordinance has as a goal "to confer powers, and impose duties and restrictions in relation to gold, currency payments, securities, debts, and import, export, transfer and settlement of property" (Omaji: 1987, P.75). In this ordinance no person was to transact business in gold and foreign currency except with the permission of the financial secretary. Section 21 and 22 specifically prohibited importation into, and exportation from Nigeria of foreign currency. Section 34 provided for the financial secretary demanding and getting information from the authorised dealers. Besides, while the ordinance allowed free payment to countries within the sterling areas for all legal transactions, special permission was required for payments to non-sterling area. Above all, several punishments ranging from fine to as long as 2 years imprisonment were defined for the non-compliance.

However, the crucial issue that bother the mind of the scholars - the political economist in particular, is "what made this law exigent in Nigeria at the time it was articulated". The contention emanated from the reality that the Nigeria"s external sector, measure in term of the BOPs, was not in disequilibrium as at the time the ordinance was enacted. However, the scholars had agreed that the ordinance was enacted simply to safeguard the British monopoly of administration and trade in Nigeria. The discriminatory practice of the ordinance lends credence to this thinking. In sum, with reference to the ordinance, Omaji (1987) concluded that "the exchange control law was handy".

POST-INDEPENDENCE EXCHANGE CONTROL POLICY

On the role of exchange control regulations in the post-independence era, the work by Anifowose (1983) stands quite relevant. This sub-section of our work draws largely from Anifowose's work. The review of the exchange control regulations, however, shall be done in series divided into phases according to the restrictive practises of the control.

PHASE 1: 1962 - 1966

The exchange control act of 1962 was the first indigenous legislated exchange control regulation. Though the 1962 Act supplanted the 1950 colonial exchange control ordinance, the 1962 Act was produced to reflect the sovereign status of the country.

The historical origin of the 1962 Act can be traced to the declarations of the Federal Minister of Finance in 1962. In his mobilisation budget speech in 1962, Federal Finance Minister, Chief Okotie-Eboh, conceded that it was not possible to rule out entirely "a situation arising when all other measures have proved inadequate and government is left with no alternative but to resort to physical controls" (Anifowose: 1983). By deduction, the expected failure of government fiscal and monetary policies gave birth to the articulation of an exchange control regulations. At the conceptual level, the 1962 Act is linked to a fire extinguisher which will be used only in an emergence situation. The Minister argued "the new exchange control bill will ensure that if, against all the odds, a major balance of payments crisis should arise, the federal government is fully

prepared to meet it".

Under the provisions of the 1962 Act, the following arguments are noted:

(a) the act forbade foreign exchange transactions by Nigerian residents without the approval of the authorities;

(b) all FOREX receipts by residents are to be surrendered to the exchange control dealers who subsequently deposited them to the CBN;

(c) the Minister of Finance was vested with the overall responsibility for the administration of exchange controls. The Minister reserve the right to delegate the power to a defined FOREX dealers/agents, viz banks, hotels and post office who is limited to authorised only FOREX transaction not exceeding ₦50.00, and

(d) FOREX proceeds are to be repatriated within six months of sale of produce.

Ironically, however, despite the historic achievement made by the Act, it is observed that the Act was used passively by the government as an instrument of BOPs adjustment. Record indicated that up to the mid-1967, the Act was applied liberally. This is because the authorities, up to that period, relied mainly on fiscal and monetary policy measures to deal with the problems arising from the country's external sector.

Apart from the passive application of the ACt, scholars have also challenged the sovereignty identity of the Act. Amongst other points, political economists argued that the Act still retained largely the identities of exchange control ordinance of the Colonial era. The Act was noted to have retained the

classification of our external trade into preferred and non-preferred zones and the liberal supervision of trade within the preferred zone. As a consequence, the Act suffer the inability to "effectively control the movement of fund out of the country since the bulk of the FOREX transfers were to the preferred zones which did not require formal approval". In this context, the critique submitted that the Act possessed a dependency syndrome that castled shadow on its sovereignty nature.

PHASE II: 1967 - 1971

Unlike the Exchange Control Act of 1962 that was articulated as a 'stand-by' measure against unsavoury development in the external payment account, the 1967 exchange control measure begins an era of an active use of the exchange control as an instrument of BOPs adjustment.

Between 1967 to 1971, records indicate that stringent exchange control measure were adopted. Strict measures were adopted subsequent to the severe pressures on the BOP leading to a rapid draw-down of the country's external reserves. In particular, the available data indicate that the external assets declined from ₦769.1million at the end of 1966 to ₦125.2million in June 1967. Besides, the month of imports equivalent of the FOREX reserves was observed to have fallen from 7 months to as low as 3.2 and 1.7 in 1966 and 1967 respectively. The 1967 value of month of imports was regarded fearful when compared to the 4 month of import reserve equivalent considered as a rough indicator of the adequacy of reserves.

Depending on the seriousness of the BOPs imbalance, the following features were recorded in the 1967 to 1971 exchange control Acts.

i) the allocation of FOREX was on a priority basis. For this purpose, imports were classified into essential and non-essential commodities/services;

ii) the introduction of 90 and 180 day mandatory system of payments for imports;

iii) the imposition of specific import licence on about 274 commodities;

iv) the basic travel allowance (BTA) for residents was reduced from ₦500 a year to ₦200 per person (₦100 per child). The basic travel allowance became applicable to travel to sterling area countries which hitherto was unrestricted.

v) personal remittances by foreign nationals residing in Nigeria were limited to 50 per cent of their gross taxable income in Nigeria;

iv) the requirement that FOREX receipts from non-oil exports should be surrendered to the Central Bank was extended to cover all sources;

vii) the Central Bank imposed a ceiling on Bank credit for imports, and

viii) introduction of FOREX budgeting in 1971. This aimed at relating aggregate FOREX expenditure to earnings.

Apart from the explicit stringency of the controls, it was appreciated that the Acts corrected the capital flaw of the 1962 exchange controls Act. Namely, the distinction between sterling and non-sterling area was removed. Thus, all payments and

receipts from sterling and non-sterling area became subject to the same regulations that applied to non-sterling areas. The relevance of the abolition would ensure an effective control of FOREX transfer across the Nigeria border.

1967 DEVALUATION CONTROVERSY

The report on the phase II exchange controls period will not be completed without mentioning the 1967 devaluation controversy. Consequent to the devaluation of the UK's pound sterling (F) in 1967 the desirability of devaluing Nigeria's pound sterling assume a topical issue. The debate was rooted in the fixity of the Nigeria's pound sterling to the UK's pound sterling. However, the Nigerian government resisted the devaluation of Nigeria currency during the period. The reason is because "the volume of trade between Nigeria and the UK, when compared with that of between Nigeria and other countries, was not considered large enough to call for the devaluation of Nigeria's pound" (CBN annual report, 1968; p.11). In this context, Exchange control regulations was still regarded adequate to govern the Nigeria's BOPs problem.

PHASE III: APRIL 1972 - MARCH 1977

In this period, a relaxed exchange controls regulations was observed. According to Anifowoshe (1983) "the necessary but insufficient reason for the relaxation of exchange control measures was a noticeable improvement in the BOPs either in the sense of a turn around from a deficit to a surplus position or an increase in the surplus". The improvement was adduced mainly to

the substantial increases in the price of crude petroleum. As statistics indicate, the oil boom exemplified by the more than four fold increase in the price of crude oil brought with it massive accumulation of Nigeria's external reserve. Evidently, the month-of-imports equivalent of FOREX reserves jumped from 2.3 in 1972 to 3.0 in 1973 and assumed a tremendous value of 23.4 in 1974. A balance of payments surplus of ₦3,102.0 million was recorded in 1974. Although statistics indicate that surplus declined to ₦157.5 million in 1975, the month-of-imports equivalent of reserves was still known to be comfortable and capable of supporting a further liberalization of the exchange control regulations.

Consequent to the healthy BOPs, the following liberal exchange control measures were conceived and pursued:

i) Restoration of more remittances for expatriates to 50 percent of their gross taxable annual salary subject to a maximum of ₦9,000 as against ₦7,000 formerly.

ii) Basic travel allowance (BTA) restored to a maximum of ₦200 per adult. This was raised to ₦400 and ₦1,000 per annum per adult in 1974 and 1975 respectively. In all cases the children were allowed half rate of adults.

iii) full restoration of normal international commercial practice in payment for imports whereby:

(a) payment for imports at shipment;

(b) prepayments on the basis of letters of credits, and

(c) permission granted to commercial banks to keep working balances abroad to ensure prompt payment.

iv) The ceiling of ₦2,000 as maximum fee payable to non-resident director of a Nigerian company was lifted and could now be whatever reasonable fee such non-resident directors earn from their membership of the boards of Nigerian companies.

1973 DEVALUATION'S SYNDROME

Following the development in the international financial scene, viz the collapse of the Bretton woods system n 1971 and the subsequent emergence of a generalised floating of the major world currencies in 1973, the adjustment (devaluation/depreciation) of the Nigeria's exchange rate policy once again emerged topical.

Prior to 1973, the Nigerian government has reluctant to devalue her currency even in light of changing circumstances in the world economic order. Apart from 1968 Devaluation Controversy, another good example occurred in 1971. Evidently, when the US dollar (US $) was devalued in December 1971, the Nigerian government decided to maintain the par value of her currency in terms of gold. This decision was, understandably, taken because of:

i) the BOPs situation. Devaluation would have made imports more expensive relative to domestic output and would therefore have created deficits given that Nigeria's exports at the time were quite low, and given that Nigeria has a low import price elasticity;

ii) the second national plan was in its second year, devaluation would have added to its cost, and

iii) that inflation which had been carried over from the civil

war years, would be worsened (Aigbokhan: 1988).

Conversely, however, the 1973 US dollar devaluation was not a push over. Thus, when in 1973 the dollar was devalued by 10 percent, the Nigeria's currency, for the first time since independence, was also devalued. The gold equivalent of the Naira which before then was fixed at 1.24 grams of fine gold to one naira was reduced by 10 percent. Though by inference the naira devaluation was a derivative of the dollar devaluation but it rather exposed the dependency nature of Nigeria's exchange rate policy. Nevertheless, the CBN articulated the reason for the devaluation thus:

> "The Federal Government decided to devalue the naira in order to prevent the country's import bill from rising to unmanageable proportions, to ensure that the local currency value of exports did not fall, to protect the products of local industries from excessive competition from imports, and to discourage increase outflow of capital" (CBN annual report and Statement of account: 1973, P.140).

Importantly, however, the devaluation experienced was not pursued for long. Shortly after the devaluation, the government returned to its active "managed float" and no attempt was made to prevent naira appreciation. Record show that the real exchange rate fell from 108.6 in 1971 to 100 in the year 1973 (due to 1973 devaluation) but thereafter it rose from 101.1 in 1974 to 121.6 and 141.0 in 1975 and 1976 respectively. The reason for upward trends was expressed thus, in 1976/76 budget statement:

"The nation is today in the happy and uncommon position of having a currency that has become very strong. Our naira has of recent appreciated in relation to the major trading currencies and the federal military government will continue to pursue an active exchange rate policy to reflect the strength of the country's BOPs with a view to reducing the degree of imported inflation".

Late in 1976, the techniques of determining the Nigeria's naira value was modified. In retrospect, prior to 1971 the value of the naira has been determined by the gold content approach. Following the generalised floating the monetary authorities in Nigeria did not automatically elect to float the naira independently, but rather elect to peg it to the US dollar. The reason was because of an effort to evolve a viable rate that would minimise inflation, equilibrate the BOPs and optimise, the external reserves position (Omoruyi: 1987). Ironically, not too long the drawbacks of pegging to a single currency became manifest, viz the de-facto devaluation of naira in 1973 in sympathy with the 1973 devaluation of the US dollar. In 1974, the policy of pegging to a single currency was abandoned, hence Nigeria prefer to embark on an independent exchange rate policy such that the naira exchange will be fixed in terms of the US dollar and the pound sterling independently based on the relative strengths of the two currency in the FOREX market. Finally, however, in 1976 it dawn on the government that the best way to ensure stability and viability of the naira was to peg it to a

basket of currencies. As a result, the naira was pegged to a basket of currencies comprising the seven currencies of Nigeria's trading partners. The basket experiment covered 1976 to 1985 (the period of 1976 to 1983 was underlined by import weighted basket of currencies while 1984 - 1985 was governed by trade-weighted basket of currencies). The basket experiment (1976 - 1985) was supported by such factors like reserve level, cross-rate considerations, relative rates of inflation and discretional judgment of the perceived relative strengths of various currencies of major trading partners (Ojo: 1990, P.54).

PHASE IV: APRIL 1977 - MARCH 1980

By 1977, it was a general believe that the naira was unduly overvalued in both nominal and real terms against the US dollar (the reference currency). The apparent widespread distortions in the production and consumption patterns in the economy lents a credence to this thinking. Above all, statistics indicate that the BOPs deteriorated sharply in 1976 resulting in a deficit of ₦339.9million as against surpluses of ₦157.5million and ₦3.102.2million in 1975 and 1974 respectively. The month-of-imports equivalent of the reserves also was noted to have assumed the value of 4.1 in 1977 compared with a value of an average of 11.2 in the preceding three years. Against this background, the reversal of the prior liberal exchange control was inevitable. During this phase, however, strict exchange controls measure were pursued. Amongst the measures included:

i) reduction from 60 to 50 percent of consultancy and technical

fees remittable by foreign consulting companies;

ii) reduction of basic travel and pilgrimage allowance from ₦1,000.00 to ₦500.00 per adult, and from ₦500 to ₦250 per child under the age of sixteen years;

iii) reduction of business trips from 15 to 14 days maximum per trip;

iv) re-introduction of certificate value of imports; etc.

Very importantly, in an attempt to make the exchange control measures more effective, some schemes were introduced:

i) the exchange control (anti-sabotage) decree of 1977. The decree established a number of tribunals to try FOREX offenders;

ii) the comprehensive import supervision scheme (CISS). The scheme became operational from January, 1979. The scheme involves a preshipment check on prices, volume and quality of imported goods worth over ₦20,000. Specifically, the scheme was introduced to forestall a number of malpractices including:

(a) overloading of invoices for the purpose of transferring FOREX abroad;

(b) under-invoicing of imports in order to pay less import duties;

(c) importation of obsolete plant and machinery at the prices of new ones;

(d) importation of decayed or rotten food items and expired drugs;

(e) falsification of documents generally;

(f) FOREX claims for goods not imported or services not rendered, and

(g) over-pricing of federal government projects with a view to keeping the gains abroad in FOREX; etc.

PHASE V: 1980 - NOVEMBER 1981

Attendant upon an improvement in the BOPs due largely to a rosy development in the international oil market, the exchange controls administration was noted to be soft-pedal in the period spanning 1980 to 1981. The soft-pedaling was also claimed to have been pursued because the tight exchange control regulations was noted to have become too cumbersome to implement. Namely, the new regulations adopt a liberal system of exchange controls aimed at curbing rampant abuses and malpractices in respect of FOREX transactions. Such malpractices included over-invoicing of import bills, smuggling of currencies and goods across the borders, false documentation of import bills and making claims for services not rendered and goods not imported.

The following salient features were pursued in the 1980 - 1981 exchange control regulations:

i) In order to minimise the inevitable delays arising from the pre-shipment inspection of imports introduced in 1979, industrial raw materials and spare parts covered by approved user scheme were exempted from such inspection.

ii) Basic travel allowance for overseas trips was increased to ₦1,000 for adults and ₦500 for children under the age of twelve years as against the rates fixed in October 1977,

namely ₦500 and ₦250 for adult and children under the age of sixteen years respectively.

iii) To facilitate processing of applications for FOREX for public officers traveling abroad on official duties, Central Bank branches were authorised to approve such applications without reference to the head office in Lagos.

iv) The maximum amount payable as off-shore cost of consultancy fees remained unchanged at 30 percent of total project cost but government would consider special cases of high percentages on their individual merits.

v) In order to bring the practice in line with international standard, royalties are now to be related to the volume of sales instead of to profit.

vi) The rate of home remittance for female expatriate workers married to Nigerians was raised to equalize with that of other expatriate workers in Nigeria which currently stands at 50 percent of net salary, etc.

PHASE VI: 1982 - 1985

This phase recorded the last experiment of exchange control measures in Nigeria. The era, however, was governed by stringent exchange control measures.

The articulation of the 1982 - 85 exchange control measures were preceded by a severe pressure on the BOPs account. Since 1981 we have been experiencing severe economic difficulties as

part of the global economic recession. While the FOREX disbursements have been exceeding the budgeted levels, FOREX receipts have been consistently on the decline, resulting in a downward trend in our external reserves (see Appendix 2). The reserves which stood at about ₦5.7billion at the end of May 1981 were rapidly depleted in the subsequent months to a level of only ₦1.9billion at the end of 1981. Foreign debts mounted in the face of rising imports-cum-declines in oil export.

In response to the rapidly deteriorating Nigerian economic situation, the Shagari administration passed the economic stabilisation Act of 1982. The Act was designed to specifically correct the unhealthy developments in the BOPs and boost domestic production. The exchange control measures as incorporated in the Act included:

i) reduction in basic travel allowance from ₦800 to ₦500 and applicable only to persons 16 years and above. Children under 16 years ceased to enjoy the basic travel allowance facility;

ii) business travel allowance was reduced from ₦3,000 to ₦2,500 per annum for registered companies;

iii) re-imposition of pre-shipment inspection for raw materials, spare parts, books and fish, and

iv) reduction in repatriable consultancy fees from 30% to 20%.

Despite the exchange control measures of the 1982 Act, the development in the international oil market which caused the price of oil to fall coupled with the subsequent decline in the FOREX earning, aggravated the problems in the external sector.

Statistics showed that the FOREX earning dropped to ₦8,449.7million in 1983 from ₦10,042.9million in 1982, and the payment arrears doubled from ₦2.2billion in 1982 to over ₦4.4billion in 1983. Moreso, record indicated that there was a decline in the rate of inflow of new capital. In this context, the strict control measures were re-inforced and made more stringent.

For example, in 1984 a new system of FOREX allocation was designed. The innovation suggested allocation of FOREX to authorized dealers based on global, sectoral, sub-sectoral and monthly ceilings (Odozi: 1986). To foster FOREX budget, the imposition of import licensing on a comprehensive scale and matching of import licenses issued with the FOREX budget for imports was vigorously pursued.

In 1985, the following measures were strictly observed in the administration of exchange control:

i) the BTA pegged at ₦2,500 per annum for registered companies in 1983 was suspended in 1985;

ii) the BTA fixed at ₦500 in 1983 was drastically reduced to ₦100 in 1985;

iii) the allowance for pilgrims duly approved remained the same for both 1983 - 1985. But the number of persons allowed to perform the hajj was reduced from 50,000 for 1983 to 20,000 for 1985;

iv) medical travels outside Nigeria was restricted;

v) anti-sabotage decree of 1977 was re-introduced;

vi) embargo was placed on external borrowing, except for projects which the government deemed very essential in the

public interest, and

vii) the importation of rice and maize was banned with effect from 1st October, 1985.

From the foregoing, it can be concluded that the fixed exchange rate system cum exchange control measures has, largely been adopted in the Nigerian economy since 1960. In particular, it amount to an interesting point to note that the exchange control measures have been consistently administered in response to the changing opportunities in the international economic spectrum as manifested in the current balances of the external payments account. Accordingly, we observed as noted earlier, that the years of payment imbalances were characterised by strict exchange control measures while liberal exchange control measures dominated the era of comfortable BOPs.

3.1.2 AN APPRAISAL OF THE EXCHANGE CONTROL MEASURES IN NIGERIA: 1960 - MID 1986

It cannot be disputed that the application of the exchange control measures has influenced the position of the Nigeria's external payments account. History has recorded that in the years when exchange control regulations were strictly enforced there was a corresponding improvement in the BOPs. For instance, the tightening of the exchange control measures in the period 1967 to 1971 reduced the average monthly import bill in 1967 and 1968 to ₦37.3million and ₦32.1million respectively form ₦42.7million in 1966. It can equally be seen, on record, that the tight measure had a desirable impact on outpayments for miscellaneous services such as management, consultancy and

technical fees during the war period. The value of payments for such services declined from ₦91.6 million in 1966 to ₦86.6million in 1968. Similarly the effect of the controls on private and public transfers during the war period was felt. In these years unilateral transfers were below their 1966 level, the largest decline of 11.0% being recorded in 1968 when foreigners were allow remittance of 50% of gross taxable income in FOREX. Above all, evidence showed that surpluses were recorded in the BOPs accounts during 1968 through 1971. Though it is not a hidden fact that some scholars in an attempt to qualify the BOPs surpluses in the war period have contended that the surpluses were achieved through the deferred payments caused by the dangerously low level of FOREX resources that made it difficult for immediate release of FOREX, it is, nevertheless, obvious that the impact of the exchange control was decisive during the war years (1967 - 1970). Anifowose has written thus:

> "without the stringent exchange control measures it would have been difficult to prosecute the war without resorting to large scale external borrowing".

He contended further:

> "moreover, the measures did avert the drain on the country's external reserves which was precipitated by the outbreak of hostilities".

Following the 1977 - 80 stringent exchange controls, available data showed that the control had a noticeable impact on the trend of the Nigeria's external payment accounts. For example CBN statistics indicated that the rate of increase in

FOREX outflow was reduced from 25.1% in 1976 to 20% and 8.5% in 1977 and 1978 respectively. In absolute figure, the level of outflow declined by 3.4% from ₦8,990.9million in 1978 to ₦8,664.0million in 1979. The compulsory import supervision scheme that was introduced in 1979 also yielded a positive results. Statistics showed that, during the immediate three years of its adoption, direct FOREX savings due to the pre-shipment inspection of imports amounted to ₦67.1million, ₦176.8million and ₦313.9million in 1979, 1980 and 1981 respectively (Anifowose: 1983). Available data further revealed that the abrupt declined in the invisible transactions, viz outflow on travels, contract charges and management fees between 1978 and 1979 was not unconnected with the strict control measures in the period. The decline, unequivocably, produced an overall reduction in the level of deficits in the services accounts during the reference periods.

On another plane, historical data showed that the restrictive control measures of 1982 - 1985 were not without a resultant effect on the payment accounts. For instance, the 1982 control measures, as emphasized in 1983, resulted in a fall in imports by about 23% but ironically exports also declined by about 13%. The tight exchange control measures innovated and introduced in 1984 and 1985 yielded, also, very encouraging results in terms of reducing the level of FOREX outflow as well as enhancing FOREX receipts from the non-oil sector. Available data show that the net inflow improved from a deficit of ₦2,557 million in 1983 to surplus of ₦245 and ₦561 million in 1984 and 1985 respectively. The BOPs surplus of ₦354.8 million in 1984 after three (3) years

of persistent deficits was largely attributed to the tough FOREX measures adopted in 1984. In general, the principal objectives of matching approvals with the FOREX budgetary allocation, maximising receipts and payments of current transactions on current basis were substantially achieved.

Symmetrically however, the liberal exchange control regulations were noted to have generated a BOPs deficits. A close look at the BOPs account showed that the BOPs deficits were recorded in twelve years between 1960 and 1985. The deficit years include: 1960 - 1964, 1966 - 1967 as well as in 1972, 1976, 1980 and 1981. The noted years were largely the years of liberal exchange control regulations. For instance, in 1972 - 1977 the available data recorded that the values of the miscellaneous services such as management and technical fees and foreign travel expenses were on an upward trend. The payments for miscellaneous services rose to a peak of ₦898.6 million in 1977 from a balance of ₦86.6 million in 1968. Similarly, the Foreign travel expenses was noted to have shown an upward trend: rising form ₦30 million in 1970 to ₦257.2 million in 1977. More specifically, the 1972 to 1977 exchange control liberalisation was assumed to have generated unrestricted importation of goods. Statistics showed that the percentage increase in imports ranged from as low as 23.7 in 1973 to a phenomenal 114.0 in 1975.

Also, following the liberal exchange controls in 1980, record showed that, as a proportion of GDP, the current account surplus of 2 and 5% in 1979 and 1980 experienced a downturn assuming a deficit of 8.5 and 9.9% in 1981 and 1982 respectively

(Oshikoya: 1990).

From the foregoing, it can be inferred from history that if exchange controls are effectively enforced it can be quite useful for dealing with external imbalance in particular with the capital movements. It can be used to condition the country's external payments account as desired by rationing foreign currencies for essential payments abroad and thus restricting the demand for foreign currency to the amount currently received from the country's exports and other sources of foreign currency receipts. In summary, upon the strength of the exchange control, Ahmed (1985) had consented thus:

> "although one acknowledges that the best system is one that is free of controls, it is clear that such a system is an ideal construct, incapable of realisation in the real world. Moreover, under conditions of economic emergency through which most developing countries are passing and given their high import propensity, the techniques indicated by conventional economic theory and urged by the IMF do not give developing countries enough flexibility".

With peculiar attention to the system of exchange control, he writes:

> "clearly, in our own circumstances, the agreement is not whether there should be exchange controls or not. The argument is over the manner and scope of control. Without exchange controls, our foreign exchange resources would have been completely depleted during this period of recession".

Despite the scholar contentment with the application of exchange control in particular in Nigeria, exchange controls are considered in the literature of international economics as a "socially inferior" policy option for balance of payments adjustment. In particular, opponents of exchange controls argue that the administrative costs of enforcing controls, private costs in trying to evade them or comply with them and other real costs are so high that the controls serve no useful purpose.

In practise, exchange control is noted to fuel and generate currency over-valuation. The application of exchange controls attendant upon fixed exchange rate policy which imply keeping nominal exchange rates constant even in the face of rising domestic inflation denotes currency over-valuation. This assertion is better expressed in the purchasing power parity model of an exchange rate behaviour. The model, briefly, suggest that if a country's exchange rate is not adjusted to reflect, say the higher inflation in the home country than in its trading partners, the country's rate of exchange appreciates in real terms in relation to its trading partners. In Nigeria during the fixed exchange rate regime cum exchange controls era, this model can be agreed to be appropriate. This is because it approximate the real economic situation of the time. Given the pursuit of a relatively stable nominal exchange rate, the country's rate of exchange appreciated gradually from 1960 to the time the fixed exchange rate system was abolished in mid-1986. Statistics showed, among other things, that the real exchange rate (1973 =

100) assumed the value of 108 in 1971 and as high as 140.2 and 217.3 in 1980 and 1984 respectively compared with its 75.1 value in 1960 (see Appendix 4).

Conventionally, the implication of currency over-valuation cannot be far fetched. The purchasing power parity model in particular, had postulated that an increase in real exchange rate goes to worsen the term-of-trade against tradables. As a consequence, exports decline because their prices expressed in the trading partners' currencies has increased. When the demand elasticity facing the exporter's commodity is greater than one, which is the case for most LDCs - Nigeria inclusive simple logic prove that export revenues will decline in terms of the trading partners' currencies. This situation cannot be disputed in the case of Nigeria. Between 1960 and mid-1986, the pursuance of fixed exchange rate system has worsen the term-of-trade against export. The effect on non-oil export was noted to be very severe. Available data revealed that the cocoa export for example declined and cocoa production declined from 305 thousand tonnes in 1970 to 153 and 100 thousand tonnes in 1980 and 1986 respectively. Index of Groundnut export similarly show a decline form 270 in 1971 to a low level of 41.5 in 1980. The implication of naira over-valuation became enormous when we examined the proportion of non-oil in total export. Available data revealed that the percentage of Non-oil export in the total export deteriorated to a level of 3.2 and 1.4 in 1985 and 1983 respectively from a level of 42.4 in 1970 and as high as about 80 in 1961 (see appendix 5). In summary, the decline in exports constituted a deterrent factor to the well-being of the Nigeria's

external payment account and exercabated external payment imbalance.

On another plane, currency over-valuation is known to cheapen and encourages imports. This is so because an over-valued currency fetches more foreign currency than it really should. Thus, the price of goods purchased with foreign currency is relatively cheap when compared with the price of a domestic alternatives. This was one of the reasons why Nigeria recorded a massive importation during the reference period. Statistics showed that imports (oil sector) increased from ₦52.2 million in 1970 to ₦913.9 million in 1986. The imports (non oil sector) similarly showed an upward trend, rising from ₦704.2 million in 1970 to ₦7,010 million in 1985. For a detailed trend of import of principal commodities (see appendix 6). (For empirical exposition of the impact of real exchange rate appreciation on Nigeria's imports, see Djavad, S. I., 1989).

More importantly, however, the implication of naira over-valuation was not favourable as it contributed to changing the consumption habit of Nigerians as they (Nigerians) preferred imported foods to locally produced ones. Besides, it was quite unfortunate that the stable nominal exchange rate policy that was devised to encourage import substitution industrialisation (ISI) strategy ended-up encouraging importation, and concomitantly, weaken and undermine the success of ISI. Similarly, naira over-valuation encouraged smuggling in various forms which, apart from undermining the smooth atmosphere for local manufacturing industry, constituted a loss of revenue (import duties) to the

government. It also generated a loss of foreign exchange earnings from the official to the unofficial sources.

Apart from the aforementioned point, it is a general knowledge that, to some extent, naira over-valuation discouraged foreign capital inflow. This was based on the fact that foreign currencies brought into the country because of over-valued naira fetched the foreigner less amount of naira (Ndebbio: 1987). Consequently, over-valuation encouraged capital flight. This is so because an over-valued naira fetched more foreign currency than it really should. Hence, foreigners usually take advantage of this to unnecessarily repatriate earnings, dividends and capital. The evidence of this was reflected in the huge amounts of aggregate capital outflows compared with inflows particularly in 1981 and 1982 (see appendix 3).

In conclusion, the application of fixed exchange rate system has not gone without a result. But, ironically, apart form yielding a stable and predictable nominal exchange rate, a healthy external payment was never achieved. The rigid link of exchange rate system with the changes in internal productivity and, in particular, with dynamics in the world economic system critically suggest a passive integration that resulted in structural maladies in external trade account. As a consequence, the management of the fixed exchange rate system was largely crisis ridden. In many quarters, cases of official corruption were reported. Dibua (1990) writes:

> "the system exhibit a great deal of inefficiency in allocation of foreign exchange since factors other than the merits of individual applications were taken into

account".

In the next section, we will attempt to review the content of the market-oriented exchange rate policy tagged second-tier foreign exchange market (SFEM). Its assumptions, prospects and potentials will be identified and evaluated.

3.2 EXCHANGE RATE POLICY UNDER SAP: 1986 - 1989

The most topical and controversial issue introduced by the SAP is the re-articulation of exchange rate policy in Nigeria. In this section, we will explore the theoretical framework of the new exchange rate policy (SFEM) and critically appraise the extent to which it has reformed the Nigeria external sector in particular the Nigeria external payment account.

In retrospect, the introduction of SAP can be seen against the background of two major developments, viz the escalating external imbalances and a threatening internal economic crisis which in itself was considered as a derivative of the crisis of external sector. Though, record indicate that the federal government formally admitted the existence of a serious economic crisis in Nigeria by April 1982, it was clear that the courage to reform the Nigeria's exchange rate policy was not embraced until mid 1986. Prior to that 1986, the then exchange control regulations were noted to be re-inforced and pursued. But, unfortunately, the record proved that the regulations had failed. This is because, as Kwanashie (1987) expressed, "they could not address the fundamental contradictions which exposed the Nigerian economy to vagaries of the global capitalist crisis nor did they address the internal social and economic relations that

have persistently marginalized and brutalised the mass majority of the Nigerian people".

In line with forcefully revamping and restructuring the depressed Nigerian economy, the SAP was articulated and launched on Thursday 26th June 1986. Though SAP was conceived to cover the period of July 1986 to June 1988 it has been extended beyond that date and still dominate the Nigeria's economic policy to date. The major objectives of SAP includes the following:

(a) to restructure and diversify the productive base of the economy in order to reduce dependence on the oil sector and imports;

(b) to achieve fiscal and balance of payments viability over the short and medium terms;

(c) to lay the basis for sustainable non-inflation or minimal inflationary growth, and

(d) to lesson the dominance of unproductive investment in the public sector, improve the sector's efficiency and intensify the growth potential of the private sector.

In order to achieve the stated objectives of SAP the following policy strategies were conceived:

(a) the adoption of a realistic exchange rate policy coupled with the liberalisation of the external trade and payments system;

(b) adoption of appropriate pricing policies in all sectors with a greater reliance on market forces and reduction in complex administrative controls;

(c) further rationalisation and restructuring of public expenditure and custom tariffs;

(d) debt rescheduling and debt conversion, and

(e) the adoption of tight fiscal and monetary policies. Fiscal policy measures focused on addressing the fiscal imbalance that has characterised the state of the Nigerian economy overtime while the monetary policy measures hope to stem inflationary pressure and increase domestic saving.

3.2.1 SAP: THE BASIC UNDERLYING ASSUMPTIONS

Given the goals and the policy strategies of SAP, its basic underlying assumptions can be inferred. The main points enumerated below are summarized from the paper written by Ayodele (1988). The points are, a pointer to the philosophical base of the SAP (for an extensive treatment of theoretical aspect of SAP see IMF 1987). The SAP assumptions include:

(a) The acceptance of the external sectors as the core sector in Nigeria. This explain why internal development might not be easy unless the problems associated with the external sector is first sorted out. This high-lights the IMF thesis of external balance for the attainment of internal balance in Nigeria;

(b) The conservative thesis of over extension of the public sector and the need to substantially reduce it in Nigeria while the mantle is passed onto the private sector;

(c) The balance of payments disequilibrium could be resolved in isolation of foreign countries and the burden of SAP can effectively rest on Nigeria alone with hardly any adjustment

being made by major trading partners;

(d) The unlimited efficacy of market forces to allocate available resources and also the efficacy of price incentives as a policy instrument to boost the expansion of non-oil exports.

Against this backdrop, it can be inferred, unequivocably, that the SAP cum-SFEM in Nigeria is an open adoption of the IMF/WB neo-classical paradigm for the LDCs. Traditionally, the orthodox SAP are predicated on the familiar argument that output/ employment, and prices (including wages, interest rates and exchange rates) are best determined by the free play of market forces, and that prices are the most effective instruments for the efficient allocation of resources. Besides, SAP were articulated on the stray belief that socio-political forces and institutions play a negligible role in resource allocation (Nzenwe: 1988). These contentions explain why SAP place great emphasis on demand-management/supply-incentives policies.

3.2.2 REVIEW OF THE ADMINISTRATION OF SFEM: 1986 - 1989

As noted earlier, SFEM is a part of the economic measures included in the SAP. Overtime, evidence has indicated that SFEM is a cardinal aspect of the SAP. This is because it is regarded as the most important instrument that can aid in the adjustment process. Specifically, the objectives of SFEM include the following:

(a) to obtain a realistic exchange rate value for the naira vis a vis other foreign currencies based on the interplay of

market forces;

(b) to replace import licence as an instrument of FOREX allocation with the market forces of demand and supply;

(c) to discourage high import dependence and to encourage the increased use of raw materials and development of local technology;

(d) to encourage the inflow of foreign private capital, and

(e) to promote the expansion of output of the non-oil sector for exportation and to enhance the international competitiveness of such exports.

To recapitulate, the SFEM is a market established by law - Decree 23 of 1986, for the buying and selling of foreign currencies at market determined prices. Generally, the SFEM covers all of Nigeria's external payments transactions, including those of the government. But in the interim, the following transactions were initially exempted from market and were covered under the official first-tier market up to the merger of the two-tier foreign exchange market on 2nd July, 1987:

(a) any transaction covered by Specific import licence issued in 1985 or 1986 for which a confirmed and irrevocable letter of credit was established on or before the last day immediately preceding the commencement of the SFEM;

(b) capital transfer, profits, dividends and other invisible payments for which approval has been granted by the Federal Ministry of Finance or the CBN on or before the last day

immediately preceding the commencement of the decree;

(c) public or private sector transactions relating to debt service obligations that are due and payable, official contributions and grants to international organisations and remittances to Nigeria mission abroad;

(d) net proceeds of air-tickets sold by foreign airlines up to and including the last day immediately preceding the commencement of the Decree, provided that the first leg of the journey out of Nigeria had begun before the date of commencement of the Decree.

The Nigerian government, assisted by the World Bank and the African Development Bank (ADB) constituted, in the beginning, the major source of funds in the SFEM. In order to supplement official funding of the SFEM, a domiciliary account scheme was set up in 1987 so as to permit Nigerian residents - especially, corporate bodies to open foreign currency accounts with Nigerian banks, as a means of assisting them to repartriate their funds hitherto lodged in foreign banks. In addition, Nigerian residents were allowed to retain 100 per cent of their non-oil export foreign exchange earnings as against the initial 25 per cent. To add depth to the SFEM operations, an inter-bank foreign exchange market (IFEM) was created, which allowed the banks a margin of 1 per cent over the rate at which they purchased foreign exchange from sources other than SFEM auctions. Finally, a bureau-de-change was inaugurated with a legalised operation similar to the black market operation. The objective of these measures is to enable the SFEM to rely less on official

government funding.

While the evolution of a completely free foreign exchange market has remained the ultimate policy objective of the monetary authorities in Nigeria, a consensus was however reached at the inception of the SFEM not to completely liberalise the operations of the market, in view of the supply-gap problem. Consequently, in addition to restricting the number of participants during the bidding sessions, a ceiling was also prescribed on the amount which an authorised dealer can purchase per auction. Perhaps it must be stated that the rationale for the presence of administrative control in the SFEM has been criticised. Though, on the part of the monetary authority the basis for the control has been rooted in the preposition that the logic implicit in the slogan "the market knows best" is not tenable in Nigeria under the acute shortage of FOREX, the critics has contended that the allocation formula engendered cut-throat competition amongst the authorised dealers - which in turn led to the bidding of unrealistic rates and needless depreciation of the naira vis-a-vis the US dollar. Interestingly, however, the profane changes in the SFEM operations, as noted earlier, has overtime weakened the traits of administrative controls in the SFEM operations.

The SFEM has undergone three changes in its pricing formula. Initially the "average of successful bids" was used to determine the effective SFEM exchange rate. The "average of successful bids" pricing formula simply involved taking the simple average of all the successful bids during an auction. But after two bidding sessions, this pricing formula was changed because it

rewarded speculators and penalised bidders which exhibited professionalism (Nanna: 1987). For example, in the premier auction, there was a wide divergence between the highest bid rate of ₦5.1250 = US $1.000, and the lowest bid rate of ₦2.5000 = $1.000, eventhough both bidders operate in the same market place. Also, an apparent divergence existed in the price which the highest bidder was supposedly willing to pay for a unit of US dollars, which was ₦5.1250, and the price that was actually paid (₦4.6174), which was derived via the pricing formula.

However, when it was realised that the above arrangement was inappropriate as a basis of determining a realistic exchange rate, the "marginal rate" strategy was adopted with effect from the third bidding session held on 9th october, 1986. At the same time, the allocation formula was liberalised to enable the number of successful bidders to increase minimum of competition amongst the authorised dealers, so as to enable them to bid more professionally, and thereby minimise the degree of exchange rate volatility in the SFEM.

Ironically, not too long, the capability of the "marginal rate" pricing arrangement to assist the naira to find its "realistic" value was noted to be rudimentary. This was because the assurance that market clearing price will always occur in a market arrangement where the number of participants, supply and demand are exogenously determined is quite unappealing. The failure of the formula explicitly occur during the 11th and 13th bidding sessions in which the supply of FOREX was ironically greater than demand. This development led to sudden appreciation

of the naira at a period when the economic fundamentals of the country did not show any marked improvement. Besides, the adoption of the "marginal rate" pricing formula was noted not to have produced less volatility in the naira exchange rate in the SFEM as was anticipated (Nnanna: 1987)

Again, following the apparent failure of the marginal rate pricing strategy, the Dutch Auction pricing system was adopted. The system took effect from 2nd April, 1987. Proponents of this pricing system opined that the only effective deterrent to speculative and unrealistic biddings in the SFEM is to require the bidders to buy at the price which they bided. With the introduction of the Dutch Auction, evidences have shown that most participating banks have shown more professionalism and a greater sense of responsibility in their bids. Accordingly, the systems has yielded a relative price stability as evidence by the minimal divergence between the highest and lowest bid rates.

3.2.3 SFEM: THE THEORETICAL EXPECTATIONS AND LIMITATIONS

Before operations started on SFEM, it was generally and rightly expected that the naira would be significantly devalued in the second market. Hence, theoretically, the SFEM is not different from devaluation and its impact will most likely be the same as the effects of devaluation.

What is the effect of devaluation on the domestic balance of trade? Apriori, the effect of devaluation on the domestic balance of trade (BOT) has been generally acknowledged to be in-determinate. This is because while an increase in exchange rate (devaluation) will produce an increase in the local value of

export revenue, the qualitative statement with respect to the domestic expenditures on import may go in either way depending on the domestic elasticity of demand for imports.

A devaluation of naira, as it is expected will immediately affect the relative prices of traded goods. Although the devaluation will increase the naira price of Nigeria's exports, it will, on the other hand, decrease the foreign prices of export goods from Nigeria relative to the prices of goods in the importing country and relative to the prices of exportables from third countries. The price change makes Nigeria export cheaper to external buyer. This in turn will cause a rise in demand for Nigeria export. So long as the demand change can be realised, SFEM (devaluation) will improve the Nigeria BOT via an increase in volume of export trade.

The devaluation of the naira would be particularly efficacious in Nigeria if the foreign demand for Nigeria's export is elastic. For instance, an elastic demand for export means that the demand for the devaluing country's export rises more than in proportion to the fall in the foreign price of export. The end result is an increased sales of export, and a possible improvement in the balance of payment situations. But if the foreign demand is inelastic and the price of exports in foreign currency is reduced, export earning will decrease and worsen the balance of payment situation.

The elasticity of demand for a country's exports depend on:

(a) the elasticity of demand for imports by the various countries which buy her exports;

(b) the importance of the country as an exporter compared with rival countries exporting the same kind of goods as she does;

(c) the extent to which the country's rival retaliate against a cut in her export prices by cutting theirs too, through devaluing their currencies;

(d) the range of products the country traded in world market, and

(e) the extent of period allowed for the adjustment of the demand for exports. The longer the period, the higher the elasticity of demands tend to be (Obadan: 1987).

On another plane, the price elasticity of export supply is also a necessary requisite for the beneficial impact of devaluation to be realised. Underlying the SFEM is the erroneous assumption that the price elasticity of supply in the non-oil sectors assume a value which is greater than unity. This is doubtful particularly with respect to the agricultural commodities.

In general, the size and speed of the supply response to devaluation depends on the extent which results from:

(a) putting to use previously, idle resources;

(b) increased productivity through more intensive use of resources;

(c) movement of resources from the non-tradable to the tradable sectors, and

(d) movement of resources within the tradable sectors to more productive employment (for details, see Johnson et al: 1985 and Obadan: 1987).

From empirical evidence and on theoretical ground, Nigerian economy faces a dilemma: for majority of primary products she exports, demand is price inelastic. Table (1) below show the magnitudes of demand elasticities of the nations key export items. And the table indicate that apart form rubber export, the elasticity of the commodities noted were extremely inelastic.

Table 1 : PRICE ELASTICITIES FOR EXPORT DEMAND FOR KEY EXPORT COMMODITIES

Commodities	Elasticities
Cocoa	-0.33
Palm oil	-0.33
Palm kernels	-0.23
Groundnuts	-0.07
Tuber	-0.17

Source: Olayide and Olatunbosun, 1972.

Besides the elasticity factors, the UNCTAD has expressed a reservation on the prospect of the currency devaluation cum interplay of market forces as a tool to reduce current account deficit in the developing countries in general. UNCTAD, as quoted by Abubakar (1987), sums it up correctly when it observed that:

"For most commodities, the earnings of developing countries as a whole can be increased only if volumes are controlled. This result cannot be brought about by market forces alone".

It continued:

"Indeed, if producers respond positively to price incentives, and if governments rely on currency devaluation to clear the market, there is a danger that the resulting expansion of output will so reduce the price of commodity exports that imbalances in external payments will actually be increased. However, volume control requires collective action by producers. In its absence, uncoordinated attempt by exporters of primary commodities to balance their external payments though programmes entailing devaluations may well worsen over-supply in many commodity markets and exacerbate rather than reduce developing countries' deficits on current accounts".

3.2.4 SFEM: PERFORMANCE APPRAISAL, 1986 - 1989

Judging from some selected economic indicators (i.e. exports, imports, BOPs, external debt, etc) the impact of SFEM - a variant of flexible exchange rate system has been of mixed feeling. Nevertheless, a closer look at the trend of some indicators will reveal some critical issues in the SFEM operation which may be relevant for policy decision.

To start with, the SFEM had recorded remarkable improvement

in the trade balance. Available data show that the balance of trade reached ₦27,111.0 million in 1989 from a balance of ₦2,936.9 million in 1986, the year SFEM started. This improvement is noted to have arisen due to a fall in the proportion of import in the total trade (see Appendix 7). In 1989, the total import in the trade stood at 34.7% as compared to 39.1 and 44.1% in 1986 and 1984 respectively. Beside the decline in the proportion of import in total trade as at 1989, it is interesting to note further that the sectoral breakdown of imports by major groups had witnessed though marginal a progressive product mix in the import basket. Notably, capital goods dominated with a share of 44.7% of the total import in 1989. Combined with the raw materials, it accounted for 72.6% of the total import in 1989 (see Appendix 8). This showed a significant performance when compared with their respective 61.9 and 37% in 1984 prior to the SFEM era. The apparent report of rapid rate at which local firms have been reporting the feasibility of locally sourcing of the raw materials for major industrial productions (e.g. Brewing, Baking etc.) since the introduction of SFEM, and the rate at which Nigerian consumers are shifting from imported product (e.g. Peak Milk) to locally made products (e.g. milk extracted from soya beans) .... suggest that more than ever that substantial room exists for production and consumption substitution possibilities in Nigeria.

Furthermore, the effect of SFEM on trade balance has been the boost to non-oil exports component as a result of the alteration of relative prices via exchange rate adjustment that

are attractive to foreigners. The output of agricultural export crops, especially cocoa, cotton, rubber, groundnut, palm produce, ginger and coffee were stimulated and actively traded as a result of the sharp increase in farm gate prices of these cash crops following the substantial depreciation of the naira exchange rate via SFEM. In some case, such as rubber and cocoa, abandoned trees are being rehabilitated. Similarly, SFEM has influenced the export produce mix. Statistics indicate that while the percentage of cocoa in total export value has risen from 2.05% in 1985 to 4.9% in 1987 and 5.2% in 1989, the rubber proportion in total export stood at 0.2% in 1989 in contrast to it 0.1% level in 1986 and 0.07% in 1985. Notwithstanding the changes in export produce mix however, available data has led the SFEM critics to argue that, on the whole, the non-oil export share of total export is yet to be improved. This is because the share still lies within the unit range-lying between 8.8% the highest and 5.09 the lowest in 1988 and 1989 respectively during SFEM.

Admittedly, the introduction of SFEM has brought about more efficient allocation of foreign exchange and enhanced the inflow of autonomous funds. More specifically, the introduction of SFEM has rendered administrative control on trade and foreign exchange unnecessary. The removal of control has eliminated the adverse factors such as: delays in processing import license and foreign exchange applications, corrupt practises associated with controls and other social factors which used to contribute to increases in the costs of production and has produced a good relief to all categories of foreign exchange users.

Equally, and very importantly, SFEM has led to a gradual

return of the country to credit-worthiness. SFEM has provided a favourite environment for debt rescheduling and negotiating arrangements. The effect of debt rescheduling has enabled the country to divert more foreign exchange earnings towards meeting the needs of the more pressing and growth-oriented sectors.

Mention should also be made that the state of the Nigerian external asset since 1986 has been improving. The asset stood at ₦23,294 million in 1989 compared to ₦1,816.8 million and ₦5,022.6 million in 1985 and 1986 respectively (see Appendix 3).

Although, the external sector has experienced a tremendous improvement during the SFEM period, it must be noted that some problems have been created and some left unsolved. For example, the balance of payments accounts that recorded a surplus in the year 1984 and 1985 has turned around to record deficit during the SFEM era, in 1986, 1987 and 1988 respectively. This could be due to the persistent deficit situation in the services account of the BOP during the reference period (see appendix 9).

Moreso, despite the elimination of over-valuation of the naira exchange rate - that imparted far-reaching distortion into the economic system, the frequent fluctuations and instability of the naira exchange rate has aggravated to a disturbing proportion. In fact, the various re-organization exercise which SFEM has undergone has done so little to correct the relative degree of uncertainty in the market. Hence, the wide divergence in the rates for official auction funds and those of autonomous funds overtime has remained a fertile ground for an introduction of new sets of distortions and malpractices into the economic

system. Besides, the extremely downward trend of the naira, exchange rate has aroused dissentment from the public. Critics have consented that the current trend of naira exchange rate in itself depicts a currency over-devaluation and loss of the naira pride! Against the idea that a nation's currency is the pride of that nation they wish the government should have intervened to defend and stabilise the value of the naira in the SFEM.

Furthermore, the impact of SFEM on the volume of the Nigeria's external debt has been quite unimpressive. Although evidences suggest that the debt portfolio - the composition of the Nigeria's external debt has witnessed a gradual transformation in the 1986 to 1989; such that the short term trade finance accounted for 3% in 1989 in contrast to 32% in 1984 - 1985, and as high as 40% in 1980 - 1993. Similarly, the private external loans with its high rates stands at 30.5% in 1989 in contrast to its 47.55 and 51% in 1984 - 1985 and 1980 - 1983 respectively. The over all increase witnessed in the external debt volumes has remained a major concern to well meaningful economic observers. For instance, statistics show that in dollar term, the external debt volumes has risen from less than $10 billion in 1979 to over $30 billion in 1988/89. The figure stands discouraging even in the light of the debt changing composition under SFEM. (the need to express the figures in dollar equivalent terms has become necessary in view of the unstable nature of the country's currency vis-a-vis other international currencies). Perhaps, it need to be noted that despite the drastic fall in the debt service ratio from 36.15% during 1984 - 1985 to 24.0% in 1988/89, the latter ratio when

compared to its 13.25% level in 1980 - 1983, still leaves much to desire of SFEM in radically transforming the Nigeria economy as claimed by the SAP/SFEM advocates.

Admittedly, the impact of SFEM in attracting capital inflow/foreign investment has been noted to be unsuccessful. CBN statistics reveal that the percentage change in cumulative foreign investment from United Kingdom (UK) between 1986 and 1987 was 8.6% as compared with -13.25% from USA. Though evidence suggests that the total percentage change in cumulative foreign investment between 1986 and 1987 was 7.3%, the value was not at all that encouraging when compared with the 10.5 and 43.2% figure in 1982 and 1981 respectively. The failure, however, cannot be overflogged. This is because exchange rate devaluation per see is insufficient to stimulate/generate capital inflow or discourage capital outflow. Evidently, other factors other than exchange rate determine the magnitude of capital inflow/foreign investment. In Nigeria, empirical studies have shown that the determinants of direct foreign investment include the size and growth of Nigeria's market, the need for raw materials by multinational corporations abroad, tariff protection of domestic industries, etc (Obadan: 1982). In addition, the capital absorptive capacity of the economy equally stand crucial to the capital movements. Conventionally, capital absorptive capacity is a derivative of the level of technology, size of skilled manpower, political stability, infrastructural provision and several other unquantifiables like work ethics (Ndebbio: 1987).

Finally, the inflationary implication of SFEM cannot be

overlooked. The first function of SFEM when it was launched was to increase domestic prices by as much as three fold. The prices of a number of imported items and some locally produced goods have gone up, initially as a result of the speculative activities of traders and later as a consequence of the higher cost of foreign exchange. The CBN statistics indicate that the national consumer price index (1973 = 100) has increased from 829.3 in 1986 to 914.0, 1,263 and 1,905.3 in 1987, 1988 and 1989 respectively. The rapid increased in the 1988 value was likened to the government reflationary package of the budget speech of 1988. Amongst other thing, the budget announced a total expenditure of ₦24.3 billion from an estimated revenue of ₦15.7 billion, yielding a staggering deficit of ₦8.6 billion. Besides, most of the expenditures were on non-productive sectors with the defence and securities ranking highest with a vote of ₦2.6 billion. About ₦2.5 billion was also earmarked for mass transit and for maintenance of schools and hospitals. In addition, credit expansion ceilings were raised and permissible levels of monetary growth relaxed. The gross misapplication of fiscal and monetary policies (see Appendix 10) attendant to the SFEM has generated unbearable inflationary pressure that has reduced the real values of the almost fixed level of wages and salaries causing welfare losses to workers and in general deepening the growth of poverty in Nigeria. Against this backdrop, it becomes contestable that the Nigeria's inflationary trends is a by-product of SFEM. In that context, a research task is called for. Lastly, the shortcomings of SFEM cannot be overflogged given the apparent unfavourable oil market situations in the reference

period (see Appendix 11 for oil market situations).

In conclusion, we have seen that SFEM has, in no small measure, positively affected the Nigeria external payment account. From the available export and import statistics there is no strong evidence to doubt the potency of SFEM to generate a diversification process in the Nigeria's external payment account. Beside, the apparent report of production and consumption substitution since the introduction of SFEM seem to prove the potency of SFEM. Though the performance appraisal suggest that the side effects of SFEM cannot be underrated, it is evident from our analysis that the unpleasant developments associated with SFEM is more or less a by-products of factor, such as capital absorptive capacity of the economy other than SFEM. For instance, beside the drawal of the attention of the government on the "other factors" that determine capital movements, for a successful SFEM induced net capital inflow, the review has shown that the unimaginable inflationary trend is a derivative of the government monetary unrestraint cum fiscal indiscipline policies. This suggest that the application of monetary restraint cum fiscal discipline will go to a larger extent aiding the good effort of SFEM in limiting the external payment imbalances.

In the next chapter, we hope to pursue an empirical validation of the impact of real exchange rate on the import, export and net export demand functions.

CHAPTER FOUR

4.0 SPECIFICATION OF THE MODEL

INTRODUCTION

The theoretical framework for measuring the role of exchange rate in influencing governments in import, export and net export demand functions is presented here. Our models are simplification of reality and are set up in mathematical equations that allow for empirical testing and evaluation. Despite the simplicity of the models, however, we believe that they could serve as a good framework for understanding the explanatory role of ER in the dependent variables. The ER in the models shall be termed as the real exchange rate (RER) and shall be defined, using a log-linear formulation, as the nominal exchange rate adjusted for the difference between the foreign prices (P_F) and domestic prices (Pd).

We shall have three principal models: that is the import, export and net exports models. The import and export models shall be disaggregated into its component parts. From a theoretical point of view, such a disaggregated analysis will avoid the aggregation problem of biased elasticity estimates made famous by Orcutt (Orcutt: 1970). Moreso, we hope the disaggregated analysis will provide more reliable results and information on the unique demand conditions that might be existing in each of the commodity categories.

Each of the demand functions shall be specified and estimated in the real terms. This will be adopted in order for

our equations to satisfy the homogenous function of degree zero in the relevant variables. The demand models shall, except otherwise stated, be in log-linear forms. The log-linear forms are adopted on the basis of its best results in the existing studies and in order to permit us a direct estimation of the elasticities. Besides, all the demand functions are specified in its traditional forms (that is underlied by keynesian or the elasticities approach). Hence, we shall ignore the effect of the excess liquidity or otherwise the monetary approach to the BOPs.

In each of our models, we shall accommodate sluggish demand response by employing a stock adjustment mechanism. The transformation shall be adopted on the basis of the work by Ajayi (1975) and Kincald (1984). A theoretical rationale for the transformation is provided by the existence of adjustment costs, delivery delays, recognition lags, and contract extending beyond the frequency of the data i.e. 12 months. All these factors would reduce, in the short run, the speed with which importers and exporters will adjust to changes in the relevant variables, in particular the exchange rate variable in the demand functions.

Our knowledge of economic theory and the general understanding of the demand functions will lead us to some expectations regarding the signs and the magnitude of the parameters to be estimated.

4.1.1 IMPORT-DEMAND MODEL:

Imports (M) are disaggregated into the first instance: consumer goods imports (CM), intermediate goods imports (IM) and capital goods imports (KM). Thus M = CM + IM + KM.

To facilitate our discussion, we posit that the real import demand (RM^d) depend on real Gross Domestic Product (RGDP) and real exchange rate (RER).

$$\log RM^d = \alpha_{11} + \alpha_{12} \log RGDP + \alpha_{13} \log RER \quad \ldots\ldots\ldots 4.1$$

$$\alpha_{12} > 0, \quad \alpha_{13} > 0.$$

$$\log RER = \log NER - \log P_F + \log Pd \quad \ldots\ldots\ldots\ldots\ldots 4.2$$

where: NER is the nominal exchange rate which is quoted, according to IMF rule, in terms of foreign currency units (i.e. $) per domestic currency unit (₦). P_F is the foreign price proximated by USA consumer price index (CPI) and Pd is the domestic price index proximated by Nigeria's CPI.

To accommodate the stock adjustment mechanism in Equation 4.1, on the basis of the work by Ajayi (1975) and Kincald (1984), we shall define the change in actual real import at period t ($\triangle RM_t$) as proportionate to the difference between real import demand in that period (RM_t^d) and actual real import in the previous period (RM_{t-1}), where σ is the factor of proportionality:

$$\Delta \log RM_t = \sigma(\log RM^d_t - \log RM_{t-1}) \quad \text{..... 4.3}$$

$$0 \leq \sigma \leq 1$$

The coefficient σ is interpreted as the speed of adjustment and it is assumed speedy when $\sigma = 1$ and sluggish if $\sigma = 0$.

Substituting equation 4.1 into 4.3 and manipulating we get the actual real import in year t (RM_t) to be estimated.

$$\log RM_t = \sigma_1\alpha_{11} + \sigma_1\alpha_{12} \log RGDP + \sigma_1\alpha_{13} \log RER + (1-\sigma_1) \log RM_t + \alpha_{14} DMV. \quad \text{..... 4.4}$$

where DMV = dummy variable which assumed the value zero for the years with fixed exchange rate policy (FDERS) and 1 for flexible rate system (FBERS), viz SFEM.

Similarly, each component of the aggregated imports shall be estimated under the following specifications:

$$\log RCM_t = \sigma_2\alpha_{21} + \sigma_2\alpha_{22} \log RGDP + \sigma_2\alpha_{23} \log RER + (1 - \sigma_2) \log RCM_{t-1} + \alpha_{24} DMV \quad \text{..... 4.5}$$

$$\log RIM_t = \sigma_3\alpha_{31} + \sigma_3\alpha_{32} \log IMQ + \sigma_3\alpha_{33} \log RER + (1 - \sigma_3) \log RIM_{t-1} + \alpha_{34} DMV \quad \text{..... 4.6}$$

$$\log RKM_t = \sigma_4\alpha_{41} + \sigma_4\alpha_{42} \log GFKF + \sigma_4\alpha_{43} \log RER + (1 - \sigma_4) \log RKM_{t-1} + \alpha_{44} DMV \quad \text{..... 4.7}$$

4.1.2 EXPORT - DEMAND MODEL

The specification of the demand functions for a country's exports is a much more complex and difficult task than specification of the demand functions for its imports (Shashi: 1984, P.52). This is because the determinants are global variables which may be difficult if not impossible to attain. However, for the sake of simplicity, we will assume that the demand conditions in the domestic economy set an effective constraint on our exports.

In estimating the demand functions for the country's export demands, we shall distinguish two export commodities: these are the non-oil export (NOX) and the oil export (OX). We shall, however, restrict our quantitative analysis to the impact effect of exchange rate on the NOX, this is because both the prices and quantities of oil export are exogenously determined by virtue of Nigeria's membership of OPEC. Using a log-linear formulation, the specific form of the NOX will be:

$$\log RNOX^{d}_{t} = b_{11} + b_{12} \log RGDP + b_{13} \log RER \quad \ldots\ldots\ldots\ldots \quad 4.8$$

$$b_{12} < 0, \; b_{13} < 0.$$

$$\log RER = \log NER - \log P_F + \log P_d \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots \quad 4.2$$

where $RNOX_t^d$ is the real non-oil export demand in year t and other variable remained as defined before.

To transform the $RNOX^{d}_{t}$ equation into the actual real non-

oil export ($RNOX_t$), we shall appeal also to the stock adjustment mechanism that define the change in real non-oil export at period t ($\Delta RNOX_t$) to the difference in between $RNOX^d$ in that period t and actual real non-oil export in the previous ($RNOX_{t-1}$):

$$\Delta \log RNOX_t = \lambda(\log RNOX^d_t - \log RNOX_{t-1}) \quad \ldots\ldots 4.9$$

$$0 \leq \lambda \leq 1$$

$$\Delta \log RNOX_t = \log RNOX_t - \log RNOX_{t-1} \quad \ldots\ldots 4.10$$

Substituting 4.8 into 4.9 and arranging the terms, gives the actual real non-oil export in year t to be estimated:

$$\log RNOX_t = \lambda b_{11} + \lambda b_{12} \log RGDP + \lambda b_{13} \log RER$$

$$+ (1 - \lambda) \log RNOX_{t-1} + b_{14} DMV.$$

4.1.3 NET - EXPORT DEMAND MODEL

We shall refer to Net-export (NX) as the difference between the export (X) and import (M). Hence: NX = X - M. To satisfy the homogeneity assumption we shall estimate the NX in real term. Thus: $RNX_t = RX_t - RM_t$, where RNX is the real net export, RX = real export and RM is the real import.

As we have mentioned, changes in the ER change the relative pri of Nigeria and foreign goods, and thereby affect the demand for imports and exports. Imports depend positively on the ER. If the naira is strong (natural or artificial), it buys a lot of foreign currency, and the goods sold by the rest of the world

(ROW) are correspondingly cheaper. Specifically, the effect of a higher exchange rate is to divert some aggregate demand to the ROW and boost importation. Exports, too, are sensitive to the exchange rate. A strong naira that is a high exchange rate - makes Nigeria's goods more expensive in the ROW and discourage exports. Our conclusion about the real net export is that it depend negatively on the real exchange rate. When the naira is strong, exports are lower and imports are higher. Net exports are lower on both counts. (Hall and Taylor: 1988).

In a simple algebraic formula, the real net export demand (RNX^d_t) can be modelled thus:

$$\log RNX^d_t = g - m \log RGDP - n \log RER. \quad \ldots\ldots 4.12$$

The real net export demand function summarizes how real net exports depend negatively on both RGDP and the RER.

Similarly, the RNX^d_t shall be transformed using the stock adjustment mechanism. In this direction, the change in the real net export ($\triangle RNX_t$) is defined to be equal to the proportion of the difference between the RNX_t^d and the real net export in the previous year (RNX_{t-1}):

$$\triangle \log RNX_t = d(RNX^d_t - RNX_{t-1}) \quad \ldots\ldots 4.13$$

$$0 \leq d \leq 1$$

Substituting equation 4.12 into 4.13 and rearranging the terms gives the actual real net export function to be estimated.

$$\log RNX_t = dg - dm \log RGDP - dn \log RER + (1-d)\log RNX_{t-1} + \alpha DMV \ldots. 4.14$$

The estimation of the Net exports function would helps to directly estimate the impact of the exchange rate on Nigeria trade balance.

Explanation of Symbols

RM = Real Import

RCM = Real Consumer Goods Import

RIM = Real Intermediate or Raw Material Goods Import

RKM = Real Capital Goods Import

RNOX = Real Non-oil Export

RNX = Real Net-export

RGDP = Real Gross Domestic Product

IMQ = Index of Manufactured Goods

GFKF = Gross Fixed Capital Formation

RER = Real Exchange Rate

NER = Nominal Exchange Rate

PF = Foreign Exchange proximated by USA Consumer Price Index

Pd = Nigeria's Consumer Price Index

DMV = Dummy Variable

4.2.0 ESTIMATION RESULT AND APPRAISAL

4.2.1 THE IMPORT - DEMAND MODEL: 1960 - 1989

In log-linear form the estimated result of eq.4.4 is:

RM_t = -3.60 + 1.04 RGDP + 0.069RER + 0.188RM_{t-1} - 0.89DMV

SE: 0.79 0.15 0.045 0.057 0.174

t-values: (0.57) (6.9) (1.55) (3.32) (0.512)

R^2 = 0.86, adj. R^2 = 0.84, DW + 1.546 SE = 0.30

F - Statistic = 38.0, σ_1 = 0.812

The Multiple Correlation Coefficient, R^2 = 0.86 shows that there is a high degree of association between the independent

variables taken together, and the dependent variable. The adjusted coefficient of multiple determination R^2 = 0.84 indicates that 84 percent of the variations in RM_t are accounted for by changes in the explanatory variables. In addition the observed F - Ratio (38.0) is significant at the conventional 5 per cent level showing that the joint impact of independent variables is significant. The coefficient of adjustment (σ_1) which is equal to 0.812 indicates that it is closer to the upper limit which is 1. This result suggest that the Nigerian import demand is free of delivery lags constrain. On the other hand, it can be inferred that the adjustment of the actual import to import demand is faster. From the estimated result of the equation 4.4, observation indicate that each of the regression coefficient is carrying the apriori signs postulated by economic theory. Among other inferences, the result proved that a RER appreciation has a direct implication of raising the volume of import demand in the period of our study. By implication, the result rather suggest that a RER devaluation would move the volume of import in a downward direction.

From the result, the t-values helps to ascertain the degree of confidence in the validity of the parameter estimated. From the values calculated it appears that the explanatory variables: RGDP, RER and RM_{t-1} are statistically significant at 1%, 10% and 5% respectively. The DMV is observed to be statistically insignificant which imply that the variable should be treated with caution. As a matter of caution, however, that the coefficient of the DMV is statistically insignificant does not mean that changes in the exchange rate structure do not influence

the level of import demand at all; it only means that the relationship between the two variables is weak. The explanation for the weak linkage of the two variables can be linked to the impact effect of the "Ratchet effect" that consumption of imports by Nigerians is "irreversible" in the short run. The irreversibility identity in the Nigerian consumption pattern suggest that the demand for imports is significantly determined by habit persistence nature of importation. The Durbin-Watson statistics computed confirmed that the model is free of autocorrelation.

Lastly, the estimated result can be used to test the relative contribution and also the speed of transmission of the policy variables. The computed coefficient of the policy variables will be adopted as a basis to ascertain the individual contributions to explanation (For a similar application, see Golderger: 1964 and Odama: 1981). From the estimated result the respective elasticities of import demand to income and exchange rate policies, RGDP and RER are 1.28 and 0.085. The result show that the RGDP coefficient is relatively larger than the RER coefficient. This implies that the impact of RGDP was dominant in the period of study and that the responsiveness of the volume of import demand to income policy is more predictable than that to exchange rate policy. This foregoing analysis remain important because it is capable of enriching the knowledge of the public policy makers who invariably have to balance or coordinate the use of financial and exchange rate tools. Besides, the findings tends to suggest that any attempt by the policy makers

aimed at reducing the pressure on the volume of import with the sole application of exchange rate policy may not yield an impressive results especially in the face of rising real income.

4.2.2 THE DISAGGREGATED IMPORT DEMAND MODEL:

(I) CONSUMER IMPORT DEMAND MODEL: 1963 - 1989

In log-linear form, the estimated result of equation 4.5 is:

RCM_t = 0.89 + 0.235 RGDP + 1.11 RER + 0.22 RCM_{t-1} + 0.014 DMV

SE: 0.43 0.08 0.291 0.135 0.28

t-values: (0.05) (2.95) (3.81) (1.64) (0.05)

R^2 = 0.865 adj. R^2 = 0.84, DW = 1.313 SE = 0.334

F - Statistic = 35.20, σ_1 = 0.78

The econometric result of the estimated equation for consumer import demand, R^2 suggest that the equation is well specified. Besides, the high degree of association reported in the model, the F _ Stastistic prove that the joint impact of the independent variables taken together is significant.

The coefficients of all the explanatory variables except the DMV satisfied the theoretical apriori criteria. The t-values indicate that the coefficients of the RGDP, RER and RCM_{t-1} are all significantly different from zero at 5%, 5% and 10% respectively. Hence, if the test is properly conducted, our hypothesis that the influence of RER on international trades, is significantly different from zero, as it is the case of consumer import, is hereby validated by Nigerian experience rather than being contradicted by it. Beside the fact that the DMV has a

wrong sign, it is equally reported that it is significantly not different from zero which imply that there is no evidence to statistically say that DMV influence the variation in the volume of consumer import in the period of study. This may be, as mentioned earlier, because of the Ratchet effect.

In contrast to the conclusion in the estimation of equation 4.4, the estimated result here seems to prove that the response of the consumer import demand to RER is more predictable than that to other policy variables i.e. RGDP. By implication, the result show that exchange rate policy will be more powerful and efficient at reducing volume of consumer import than to other policy variable (see Fig. 4 on P. 164 for the close relationship between consumer imports and real exchange rate). The coefficient of adjustment (σ_2 = 0.78) which was computed indicate that it is near the upper limit and hence the adjustment of the actual consumer import to the demand for consumer import is speedy and free of lags constrain.

(II) INTERMEDIATE/RAW MATERIAL IMPORT DEMAND MODEL: 1963 - 1989

In log-linear form, the estimated result of equation 4.6 is:

RIM_t = 0.63 + 0.43 IMQ - 0.196 RER + 0.65 RIM_{t-1} + 0.88 DMV

SE: 0.49 0.203 0.296 0.233 0.298

t-values: (1.27) (2.13) (0.66) (2.76) (2.97)

R^2 = 0.980 adj. R^2 = 0.891 DW = 1.459 SEE = 0.267

F - Statistic = 54.35, σ_3 = 0.35

The Multiple Correlation Coefficient, R^2 = 0.908 show that

there is a high degree of association between the explanatory variables and the dependent variable. The adjusted R^2 indicate that 89.1 per cent of the variations in RIM_t are accounted for by changes in the explanatory variables in the model. The F-Statistics suggest that the explanatory variables taken together is significant at 5% level of confidence.

The result show that, individually, the coefficient of the explanatory variables except the RER variable have the expected sign and are significantly different from zero at 5% confidence level. Beside the wrong sign attached to the RER variable, the t-value indicate that the coefficient is statistically insignificant which imply that the RER can be exempted from the analytical model. The explanation for the insignificance of the RER in the model could be situated in the sluggish adjustment of the actual raw material import to the demand for raw material in the period of study as indicated by the low value of the adjustment coefficient ($\delta_3 = 0.35$) and critically on the raw material import dependency syndrome in the period of study.

A dummy variable which was introduced to capture the quantum effect of the 1986 adjustment in the ER arrangement yielded an expected sign and statistically significant at 5% level of confidence which indicate that there is a strong evidence to conclude that the shift in the ER system influence the variations in the RIM_t in the period of study. This result validate the apparent report that suggest that more than ever that substantial room exists for production and consumption substitution possibilities between foreign and domestic products in Nigeria.

(III) CAPITAL IMPORT - DEMAND MODEL: 1963 - 1989

In log-linear form, the estimated result of equation 4.7 is:

RKM_t = 2.99 + 0.74 GFKF + 0.04 RER + 0.01 RKM_{t-1} + 1.37 DMV

SE: 0.67 0.096 0.22 0.062 0.27

t-values: (4.49) (7.77) (0.162) (0.14) (5.02)

R^2 = 0.92 adj. R^2 = 0.91, DW = 0.915 SE = 0.284

F - Statistic = 66.31, σ_4 = 0.99

From the result above, one can infer that the explanatory variables do help to explain the behavior of volume of capital import demand in the period covered by the study. The result indicate that about 91% of the variations in the dependent variable was accounted for by the explanatory variables. The F-statistic seek to indicate that the join impact of the explanatory variables on the dependent variable is statistically significant which imply that not all the parameter estimated are zero for explaining variation in the volume of capital import.

The result show that GFKF has the expected sign and statistically significant at 1% confidence level. A dummy variable included also yielded a correct sign and statistically significant at 1% confidence level. Evidently, the result indicate that the RER variable satisfy the theoretical apriori criteria but the first order test show that there is no strong evidence to suggest that it influence the variation in the volume of capital import in the period of study. The reason for this result might be situated in the fact that, overtime, the demand

for Nigeria's capital import has been largely the product of the institutional factor as influenced by the growth of the public sector investment. As a matter of emphasis, the statistical insignificance of the RER do not mean that changes in RER do not influence the demand for Nigeria's capital import at all; it only emphasises that the relationship between the two variables is weak and cannot be over flogged.

Lastly, the estimated result indicate that the RKM_{t-1} failed the theoretical a priori criteria and the first-order test. The reason for this may be because of the problem of multicollinearity and of the existence of the serially correlated error terms as indicated by the DW (0.915). Moreso, though, according to the coefficient of the lagged capital import (which is equal to $1 - \sigma_4$) which is near it lower limit (zero), the result suggest that volume of capital import experienced a relatively speedy adjustment of its actual import to import demand which imply that the capital import sub-sector experienced a free delivery lags constrain, the first order test rather indicate that the conclusion is not reliable.

4.2.3 REAL NON-OIL EXPORT DEMAND MODEL: 1963 - 1989

The model is specified and estimated in a linear multiple regression equation. The linear method of estimation was adopted after a non-satisfactory result generated by the log-linear estimation procedure. The result of linear estimation is hereby

written:

$RNOX_t = 10.36 - 0.012\ RGDP - 1.09\ RER + 0.66\ RNOX_{t-1} - 2.78\ DMV$

SE: 5.30 0.01 1.11 0.16 2.00

t-values: (1.95) (2.13) (0.98) (4.12) (1.38)

$R^2 = 0.90$ adj. $R^2 = 0.89$, DW = 1.62 SE = 2.44

F - Statistic = 52.39, $\lambda = 0.34$.

It is apparent from the result that the model is well specified.

The multiple coefficient of correlation $R^2 = 0.90$, indicate that there is a high association between the explanatory and dependent variables. The adjusted R^2 prove that 89% of the variation in the dependent variable is accounted for within the model. The F-Statistic suggest that the joint impact of the independent variables on dependent variable is significant at the conventional 5% level of confidence.

The estimated result show that the coefficient of the individual explanatory variable satisfied the theoretical apriori criteria in the period of study. The estimated result further reveal that the role of RER in the structural determinant of volume of non-oil export is dominant in the study period. The first-order test suggests that coefficient of the RER should be treated with caution due to the statistical insignificance of the coefficient.

The computed speed of adjustment (= 0.34) indicate that the coefficient seem closer to its lower limit which suggest a sluggish adjustment of the actual non-oil export to the demand for non-oil export. This imply that the non-oil export experienced a production lags constrain in the period of study.

4.2.4 REAL NET-EXPORT DEMAND MODEL: 1963 - 1989

The Real Net-export demand model is specified and estimated in a linear form and the result is produced below:

RNX_t = 14.496 - 0.04 RGDP - 4.76 RER + 0.69 RNX_{t-1} + 2.74 DMV

SE: 6.3 0.1 4.1 0.14 3.58

t-values: (2.3) (3.34) (1.16) (5.10) (0.76)

R^2 = 0.94 adj. R^2 = 0.93, DW = 1.89 SE = 5.67

F - Statistic = 88.68, σ = 0.31

The model is statistically significant at 5% level of confidence according to the standard measure. The multiple coefficient of correlation, R^2 = 0.94 indicate a high degree of association, and the adj. R^2 = 0.93 show that 93% of the variation in the RNX_t was accounted for by the joint impact of the explanatory variables.

On the theoretical apriori criteria, all the coefficient except the DMV produced the expected signs. Hence it is apparent from the result that the Real net-exports depend negatively on both RGDP and RER. For instance, a 1% change in RER with the level of other arguments held constant, the level of volume of net-export will change in the opposite direction by 4.76%. Namely, a 1% reduction in RER (probably by depreciation or devaluation) will produce a 4.7% increase in the volume of net-export. Similarly, a 1% reduction in RGDP will produce 0.04% increase in volume of net-export. This result ascertain that the impact of RER on net-export demand in the period of study is dominant. As a matter of caution, however, the first-order test seek to suggest that the coefficient of the RER is not reliable

due to its statistical insignificance. The result could be because of the aggregation bias of the estimate. The DMV seem to fail the theoretical apriori criteria and the first order test, hence it can be exempted from the analytical model.

4.3 IMPLICATION OF RESULTS/RECOMMENDATIONS

In this section, the econometric procedure has been adopted to capture the effect of the ER as a structural determinant of Nigeria's international economic transaction. ER, as noted earlier, was denoted as the RER in the study. In the quest for a meaningful result a disaggregated form of analysis was adopted in our model building. It is apparent from the result of the models that the models were high specified. The multiple coefficient of correlation computed form the model specified ranges from 0.86 for volume of imports to 0.94 for the volume of net-export. Beside, the F-ratios computed indicate that the explanatory variables are statistically significant in explaining variations within the models.

From the aggregated import-demand model, it was shown from our result that the relative contributions of RER was secondary to the impact effect of the RGDP in the total import model. However, a deeper information of the relative contributions of RER was noted in our disaggregated analysis, viz the estimated result proved that the role of RER seems to be dominant in the consumer import demand during the period of our study. The

implication was, however, different in the other disaggregated models. In the intermediate import demand model, quantitatively speaking, the impact of RER was indicated to be virtually non-existence. The result rather indicated that the relative contribution of the IMQ and intermediate import lagged by one year could be relied upon as the policy decision variables in the model. The result emerging from the DMV in the intermediate import demand model seek to suggest that the theoretical underpinnings for the `structuralist` thesis seems to be in doubt in Nigeria. In the capital import demand model, evidence showed that demand for capital import is less responsive to changes in RER as to the changes in Gross Fixed Capital Formation. Beside, the RER was indicated that it should infact be treated with caution in the context of policy decision making.

Against this salient but meaningful indications, it become expedient to appreciate the hypothesis that the differential impact of RER on the imports sub-sectors is not even. The implication is that the hypothesis should be critically noted in the policy decision framework if a result oriented external sector management should be experienced. For instance, while the volume of consumer imports can be left at the mercy of the ER policy variable, there is no strong evidence to suggest that the ER policy variable can significantly influence variation in the intermediate and capital import-demand. This is particularly true in light of the raw material import dependency syndrome of the Nigerian industries and because of the weak if not poor capital good industries in Nigeria. Finally, the estimated import demand models especially the total import demand model

attempt to suggest that it depicts the futility of any attempt by the policy maker for instance to reduce the pressure on the volume of import via ER policy variable in the face of outright neglect of the income policy variable.

The result of the volume of the non-oil export model is most striking. Foremost, the estimated result supported the widespread belief that RER appreciation in the time past has weakened and negatively affected the volume of the non-oil exported. Beside, the result indicated that the marginal effect of the RER on volume of non-oil export is almost 90 times the marginal effect of the real income. This imply that at the policy decision level, the role of RER cannot be substituted for by any other policy option. For the fact that the DMV incorporated to measure the quantum effect of 1986 exchange rate adjustment suggest that the structural shift in the ER arrangement can be relied on for the variations in the volume of non-oil export proved right our contention that the policy of SFEM will boost the volume of non-oil export. But this depend on the ability of SFEM to generate a RER depreciation. As a matter of caution, however, the coefficient of adjustment that indicate a production lags constrain in the supply of the non-oil export ought to be noted and attract government concern and immediate attention. Otherwise, the attainment of a rising volume of Nigeria's non-oil export attendant RER depreciation will remain skeptical if not illusory.

The impact of the RER on the volume of net-export demand excluding oil export was also analyzed quantitatively. From the

estimated result it was observed that the relative contribution of the RER was dominant in the period of analysis. The marginal effect of a policy which brings a 100 percent change in RER will bring about 479 per cent change in the level of the volume of net-export. While, on the other hand, it was observed that a 100 per cent change in income variable would result to a marginal .4 per cent change in the volume of net-export. In this context, however, it become clear that the role of RER cannot be substituted for in the quest for net-export equilibrium. It appear meaningful, however, to caution that the reliance on the potency of the RER in the net-export analytical model should be treated with caution. This is because the coefficient appear to be statistically significant only at a confidence level that is larger than the conventional 10 per cent level. A plausible explanation for this caution can be situated in the earlier conclusion that RER has differential impact on import components that must be noted in policy decision.

CHAPTER FIVE

5.0 SUMMARY AND CONCLUSIONS

Effort has been made in this work to appraise the potency of the exchange rate policy as an instrument of policy in correcting Nigeria's external imbalance. To that end, our work has been classified into chapters with each focusing on a definite goal.

In Chapter one, the essence of the study was highlighted. As a background, we have noted that the current focus of the Nigerian government on SFEM - a variant of the FBERs was because of the growing complexity of the administration of the Nigerian FOREX resources which can not even limit the growing trend of the Nigerian external imbalance. FDERS was proved to have failed and the side effect of the over-valuation was noted to be enormous. In that sense the chapter noted that the correction of over-valuation-cum-external imbalance is timely if not long overdue. Hence, we set the task to investigate the extent to which the SFEM has gone in the structural transformation of the Nigeria's external imbalance given that the external sector is "the driving force of the Nigerian economy".

In Chapter Two, the relevant literatures were reviewed. The first section dealt with the review of concepts as it relate to ER management. In brief, we established that the link between ER and external payments account is beyond dispute because ER is a cord that link the price structure of one country and those of all others, and it is the basis upon which international economic transactions are consummated. This section further distinguished between nominal and real devaluation. It is concluded that

nominal devaluation generate real devaluation only if it is not accompanied by an equiproportional increase in the domestic price level. The second section review the broad spectrum of the models of ER behaviour. The review concluded that it is no dispute saying that none of the model is capable of achieving an equilibrium ER but rather that equilibrium ER is obtainable by a permutation and combination of the identities of the notable models. Nevertheless, we held the opinion that an independent application of each model is possible but must be treated with caution. The structural determinants of the alternative ER policy was reviewed and we concluded that the choice of an ER policy is not a one or two variables prediction but rather diverse variables. Among other alternative variables noted include the stage of the country's economic development, the level of composition of trade and the relative weight attached to the macroeconomic objectives. In that context, we inferred that the choice of an ER policy is, not only, on a global scale, a relative concept but not immutable. Hence, for instance, a change in the relative weight attached to macro-objectives, ceteris paribus, may necessarily alter the structure of the ruling ER policy.

Furthermore, in Chapter Two, an analysis of the different theoretical framework to the analysis of BOP was undertaken. Namely, the reviewed approaches, viz elasticities, absorptionist and Monetary approaches were noted to complement one another but due to the easy amenability of the elasticities approach to quantitative manipulation, the elasticities approach was deemed fit to be adopted in the research task. Lastly, the literature

review was extended to available similar studies. This was done basically to appreciate past efforts and acquaint ourselves with past methodological approaches to the study and to identify the necessary gap needed to be bridged.

Chapter Three is a clear presentation of the administration and implications of ER policies in Nigeria in the period of our study. In the first instance, the system of exchange control was noted to have dominated the Nigerian economy at the on-set (1960) till the mid-1986. As a profile, Exchange control was noted to have been adopted as an adhoc policy measure that changed with the state of the Nigeria's external payment account. Beside, exchange control was noted to have generated currency over-valuation that influenced a high degree of social and economic dislocation. Though the study noted the relative stability of the naira exchange rate value in the period of exchange control, nevertheless, we noted that the fact that the controls, by it very nature; suppresses excess demand for FOREX and do not eliminate it, remain an outlet that compound the complexity of the use of exchange control which led to the abrogation of the control in mid-1986.

In the second part of chapter three, a critical review of SFEM that succeeded exchange control was undertaken. Though SFEM was conceptualised to be an open acceptance of the IMF/WB neo-classical paradigm for developing countries in BOP problem, it was nevertheless indicated that SFEM was designed as a measure to tackle the defying structural imbalances in the external payment account.

Though the study indicate that the implication of SFEM on the Nigeria's external payment account is diverse, on the basis of strong evidence we perceived that without SFEM the economic condition in Nigeria would have been worse than what we observed in the SFEM period. This is justified by the noticeable improvements in the trade balance. Namely, the proportion of import was not only, noted to have fallen in the total trade but evidence suggested that the more essential capital goods imports had reduced the proportion of consumer import in the total import produce mix. Similarly, there is a noticeable improvement in the export produce mix in favour of non-oil export produce. Evidence of rehabilitation of abandoned tree, in particular, of rubber and cocoa was mentioned. Although the study noted the weak response of capital inflow to SFEM, this was nevertheless proved not to be laid squarely on failure of SFEM. This is because there are other factor that significantly influences the inflow of capital such as capital absorptive capacity of the economy which is presently very weak in Nigeria. As a conclusion, the study indicate that although the impact of SFEM may look marginal, there is a basis to argue that SFEM has started a transformation process that will necessarily mature in due season. Against the notion of SFEM-induced inflationary pressure, we contended that the notion must be treated with caution. This is because of the apparent gross misapplication of the monetary and fiscal policies in the SFEM era (see Appendix 10). Against any doubt, we did call for a research task to ascertain the structural determinant of Nigeria's inflationary trend.

Chapter Four embodied the empirical analysis of the role and relative contributions of the real exchange rate in the Nigeria's international economic transaction. Our analysis confirm the widespread belief or idea that a RER appreciation boost import and weakens the non-oil export. The disaggregated form of the import demand model, however, indicated that the differential impact of RER on import components is not identical/even. From the estimated results, it was discerned that RER is stronger on consumer import but, statistically speaking not reliable in the intermediate and capital import demand model. Hence, we postulated that the consideration of SFEM as a sole policy to alleviating the problem of excess importation must be taken with caution. The estimated non-oil export demand model proved that the marginal effect of RER is almost 90 times stronger than the marginal effect of the immediate relevant policy variable in the model. Though we concluded that a significant result can emerge in the non-oil export demand following ER manipulation, the coefficient of adjustment computed from the model rather suggest a trait of structural rigidity in the supply of non-oil export produce which may necessarily dampen the success of SFEM. It was apparent from the result of the Net-export demand model that the role of RER cannot be marginalised in the quest for a Net-export equilibrium, though, statistically speaking, it was noted that the uses of ER policy variable should be treated with caution. A plausible explanation was nevertheless traced to the earlier caution of the differential impact of the RER on import components that needed not to be forgotten in the ER policy

decision framework.

Based on this findings, we hereby concluded that the potency of SFEM to generate a diversification process in the Nigeria's external payment account cannot be disputed. In fact, evidences suggest that there are still a potential opportunities that can be exploited if the necessary economic climate is guaranteed. In that context, we hereby recommend a set of policy decisions that can aid the SFEM in the BOP rehabilitation process.

i) The burden of external adjustment should be borne, at least, partially by restrictive financial policies rather than entirely by exchange rate adjustment. As noted in our research findings, nominal devaluation becomes valuable only when it is not accompanied by an equiproportional increase in the domestic price level. Hence, it appear that the potency of SFEM/nominal devaluation will be improved if a serious reappraisal of monetary and fiscal policy regime of the economy is carried out. The government should ensure that the targets are strictly adhered to as much as possible so that they will not be reduced to a mere window dressings and a stumbling block to the potency of SFEM.

ii) It is not a dispute that the main strand of socio-economic behaviours in Nigeria has been overwhelmingly dominated by an interplay of illusions - money illusions, buoyancy illusions, FOREX illusions, etc. It is our concern that the future policies should deviate from the illusions' and be harmonised with national development plans which tend to be addressed to national goals.

iii) The sourcing of FOREX should be intensified. In that context the role of service account in the BOP adjustment process should attract more government attention. It is pathetic to observe that the service account has been experiencing deficit over the years despite the abundant potentials that could be exploited in the distribution sphere of our international economic transaction. Besides this, government should pursue more critically the repatriation of FOREX proceeds from the sale of non-oil export produce and where necessary severe punishment should be made for non-compliance.

iv) Much as would appear that the researcher is in support of the liberalism underlining the FOREX market, it would be necessary to state that the idea of 'free market' philosophy as a strategy of economic development is fraught with danger. The role of administrative or planning tools in resource allocation should not be considered unimportant or even harmful. Since the fact still remain that there is no where in the world that free market system operates untampered with, it is logical that the government must come up with policy that will not only defend the naira but guide the allocation of the FOREX in the FOREX market. "Essential" and "non-essential" import should be distinguished and accordingly treated in the allocation of FOREX in the FOREX market. The distinction can be done along the sectoral line.

v) Although there is available indication of break-through in the local sourcing of raw materials, there is still a basis to argue for more incentive structure that would encourage further discoveries. The Raw Material Research and Development Council is a commendable programme. On another plane, it is our suggestion that policy should be designed to encourage the import - competing industries especially in the area of technological transformation.

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APPENDIX I:

NIGERIA'S CURRENCY RATES COMPARED TO SOME MAJOR WORLD CURRENCIES FROM 1964 TO 1980

YEAR	US $/₦	YEN/₦	UK £/₦
1964	1.4000	506.76	0.5013
1965	1.4000	506.76	0.5007
1966	1.4000	507.29	0.5012
1967	1.4000	507.01	0.5097
1968	1.4000	504.77	0.5849
1969	1.4000	501.72	0.5849
1970	1.4000	501.31	0.5849
1971	1.4043	487.15	0.5857
1972	1.5020	460.82	0.5746
1973	1.5904	412.98	0.6076
1974	1.6284	464.52	0.6799
1975	1.5959	482.22	0.7313
1976	1.5514	473.26	0.8836
1977	1.5747	416.57	0.8888
1978	1.6591	331.39	0.8203
1979	1.6591	414.88	0.7820
1980	1.8277	414.89	0.7865

Source: (a) CBN Annual Reports - Various issues
(b) IMF International Financial Statistics Various Issues
(c) World Bank, World Tables 1989/90
(d) UN's National Accounts Statistics 1985.

APPENDIX 2:

FOREIGN EXCHANGE BUDGET AND ACTUAL DISBURSEMENT: 1971 – 1981 (₦ MILLION)

YEAR	BUDGET (A)	DISBURSEMENT (B)	DIFFERENCE BETWEEN A & B (C)
1971	995.9	940.9	+55.0
1972	1,330.5	1,147.1	+183.4
1973	1,305.5	1,536.6	-231.1
1974	2,720.3	1,925.7	+794.4
1975	6,480.4	5,231.2	+1,249.2
1976	5,540.6	5,742.6	-202.0
1977	7,381.3	7,810.0	-428.7
1978	6,445.9	8,379.8	-1,933.9
1979	6,446.4	7,432.2	-985.8
1980	6,369.6	8,680.0	-2,310.4
1981	12,500.0	15,311.5	-2,811.5

Source: CBN Annual Reports - Various issues

APPENDIX 3:

FOREIGN EXCHANGE FLOWS

YEAR	INFLOW	OUTFLOW	NET FLOW	EXTERNAL ASSETS
1970	644.0	592.8	+51.2	180.36
1971	1,038.4	913.6	+124.8	302.7
1972	1,196.4	1,234.2	-37.8	270.26
1973	2,236.4	1,468.3	+768.1	409.07
1974	5,312.6	2,185.5	+3,127.1	3,478.66
1975	5,491.3	5,517.3	-26.0	3,696.43
1976	6,580.6	6,901.2	-320.6	3,481.62
1977	7,742.9	8,281.1	-538.2	3,034.0
1978	7,607.3	8,990.9	-1,383.6	1,350.4
1979	10,458.1	8,664.0	+1,794.1	3,250.8
1980	14,255.2	11,805.2	+2,450.0	5,648.2
1981	11,574.2	14,567.3	-2,993.1	2,703.1
1982	10,064.1	11,462.4	-1,578.3	1,065.3
1983	8,449.7	8,751.0	-301.3	828.7
1984	9,263.6	8,908.6	+355.0	1,422.1
1985	11,024.1	10,463.0	+561.1	1,816.8
1986	12,496.1	9,752.7	+2,743.4	5,022.6
1987	26,429.6	21,037.0	+5,392.6	4,224.3
1988	29,159.0	27,912.7	+1,246.3	8,959.5

Source: CBN Annual Reports - Various issues

APPENDIX 4:

TREND IN EXCHANGE RATE INDICES AND INFLATION INDEX (1973 = 100)

YEAR	NOMINAL(US. $)	REAL	INFLATION
1960	92.1	75.12	52.67
1961	92.1	81.19	56.00
1962	92.1	81.22	59.00
1963	92.1	84.2	57.33
1964	92.1	83.46	58.00
1965	92.1	85.72	60.33
1966	92.1	90.97	60.00
1967	92.1	87.22	63.69
1968	92.1	85.72	63.33
1969	92.1	91.73	69.67
1970	92.1	97.44	79.33
1971	92.39	108.27	92.33
1972	100.00	112.03	94.67
1973	100.00	100.00	100.00
1974	104.72	79.69	112.69
1975	106.90	99.24	150.33
1976	105.00	115.78	183.67
1977	102.07	125.56	223.0
1978	103.59	144.36	271.33
1979	109.16	142.1	303.00
1980	120.38	137.59	333.33
1981	107.19	140.22	402.69
1982	97.72	139.85	433.69
1983	90.95	167.67	534.33
1984	86.08	217.28	746.00
1985	73.73	201.50	786.00
1986	48.85	145.85	829.33
1987	16.42	50.37	914.00
1988	14.51	58.64	1,263.00
1989	8.93	52.63	1,905.33

Source: (a) CBN Annual Reports - Various issues
(b) IMF International Financial Statistics Various Issues
(c) World Bank, World Tables 1989/90
(d) UN's National Accounts Statistics 1985.

APPENDIX 5:

STRUCTURE OF NIGERIA'S EXPORTS, 1970 - 1989 (₦ MILLION)

1 YEAR	2 OIL	3 NON-OIL	4 TOTAL EXPORT	(2) AS % OF (4)	(3) AS % OF (4)
1970	510	375.4	885.4	57.6	42.4
1971	953.0	340.4	1,213.4	73.7	26.3
1972	1,176.2	258.0	1,434.2	82.0	18.0
1973	1,893.5	384.9	2,278.4	83.1	16.9
1974	5,365.7	429.1	5,794.8	92.6	7.4
1975	4,563.7	362.4	4,926.1	92.6	7.4
1976	6,321.6	429.5	6,751.4	93.6	6.4
1977	7,072.8	557.8	7,630.6	92.7	7.3
1978	5,653.6	662.8	6,316.4	89.5	10.5
1979	10,166	670.0	10,836.8	93.8	6.2
1980	13,632.3	554.4	14,106.7	96.1	3.9
1981	10,533.5	342.8	10,876.3	96.8	3.2
1982	8,583.8	120.9	8,704.7	98.6	1.4
1983	7,201.2	435.4	7,636.6	94.3	5.7
1984	8,840.6	274.4	9,008.0	96.3	3.2
1985	10,890.6	324.2	11,214.8	97.1	2.9
1986	8,368.5	552.0	8,920.3	93.81	6.19
1987	28,208.6	2,152.0	30,360.6	92.9	7.1
1988	28,435.4	2,757.4	31,192.8	91.16	8.84
1989	55,016.8	2,954.4	57,971.2	94.9	5.10

SOURCE: (a) CBN Annual Reports (Various Issues).
(b) UN's National Accounts Statistics 1985.

APPENDIX 6:

NIGERIA'S IMPORT STRUCTURE, 1970 - 1989

YEAR	IMPORTS ₦ MILLION	OIL SECTOR ₦ MILLION	NON-OIL SECTOR ₦ MILLION
1970	756.4	52.2	704.2
1971	1,079.0	50.6	1,028.4
1972	990.1	45.2	944.9
1973	1,224.8	41.0	1,183.8
1974	1,736.5	52.4	1,684.1
1975	3,721.5	118.0	3,603.5
1976	5,148.5	95.0	5,053.5
1977	7,116.6	102.2	7,014.4
1978	8,211.7	110.0	8,101.7
1979	7,472.5	230.0	7,242.5
1980	9,095.6	227.4	8,868.2
1981	12,719.8	199.8	12,520.0
1982	10,770.5	225.5	10,545.0
1983	8,903.7	171.6	8,732.1
1984	7,178.3	282.4	6,895.9
1985	7,062.6	51.8	7,010.8
1986	5,983.6	913.9	5,069.7
1987	17,861.7	3,170.1	14,691.6
1988	21,445.7	3,803.1	17,642.6
1989	30,860.2	4,671.6	26,188.6

SOURCE: CBN Annual Reports (Various Issues).

APPENDIX 7:

PERCENTAGE OF EXPORT AND IMPORT IN TOTAL TRADE

YEAR	TOTAL TRADE ₦ MILLION	% OF EXPORT	% OF IMPORT
1970	1641.8	53.92862	46.07138
1971	2372.400	54.51864	45.48137
1972	2424.300	59.15934	40.84065
1973	3505.200	65.96195	34.96232
1974	7531.300	76.94289	23,05711
1975	8647.000	56.96195	43.03805
1976	11902.60	54.74475	43.25526
1977	14747.20	51.74270	48.25730
1978	14276.10	42.47939	57.52062
1979	18309.30	59.18741	40.81259
1980	23282.30	60.93341	39.06659
1981	23743.10	46.42738	53.57262
1982	18976.90	43.24416	56.75584
1983	16406.20	45.72966	54.27034
1984	16266.30	55.87011	44.12989
1985	18783.40	62.39978	37.60022
1986	14904.10	59.85266	40.14734
1987	48222.30	62.95967	37.04033
1988	52638.50	59.25853	40.74147
1989	88831.40	65.25980	34.74019

SOURCE: CBN Annual Reports (Various Issues).

APPENDIX 8:

TREND OF NIGERIA'S IMPORTS BY MAJOR GROUPS AS A PERCENTAGE OF TOTAL IMPORTS, 1970 - 1989

YEAR	CONSUMER IMPORT	INTERMEDIATE IMPORT	CAPITAL IMPORT
1970	28.8	31.0	37.7
1971	31.4	28.1	39.1
1972	36.0	26.2	37.0
1973	34.6	26.7	38.0
1974	29.2	33.0	37.2
1975	30.5	26.9	42.3
1976	30.5	25.5	43.7
1977	29.3	16.4	47.9
1978	29.0	23.3	47.6
1979	28.2	23.1	48.6
1980	39.6	26.8	33.5
1981	45.1	24.8	31.6
1982	41.6	25.1	32.8
1983	41.6	25.9	32.4
1984	37.0	29.7	32.1
1985	28.3	35.3	35.2
1986	29.4	29.3	40.5
1987	24.1	33.5	42.4
1988	28.7	39.2	32.0
1989	27.3	27.9	44.7

SOURCE: CBN Annual Reports (Various Issues).

APPENDIX 9:

BALANCE OF PAYMENT STATISTICS, 1970 -1989

YEAR	CURRENT ACCOUNT	SERVICE ACCOUNT	BOP POSTITION
1970	-50.0	-208.0	+58.6
1971	-229.4	-516.2	+128.8
1972	-322.7	-785.9	-39.6
1973	52.7	-1,078.8	+174.4
1974	3,062.5	-1,314.7	+31102.2
1975	42.6	-1,387.7	+157.5
1976	-259.3	-1,455.0	-339.0
1977	-647.5	-2,082.7	-527.2
1978	-2,386.9	-1,474.6	-1,293.6
1979	1,009.5	-1,724.4	-1,868.9
1980	2,355.3	-3,462.2	+2,402.2
1981	-3,998.4	-2,948.4	-3,020.8
1982	-5,211.2	-2,209.7	-1,398.3
1983	-3,137.9	-2,070.7	-301.3
1984	44.1	-2,001.0	+354.9
1985	2,215.4	-2,617.7	+349.1
1986	-2,999.1	-6,202.6	-784.3
1987	-295.3	-14,167.2	-159.2
1988	-1,437.7	-12,818.6	-2,294.1
1989	13,968.3	-16,440.1	+8,727.8

SOURCE : CBN Annual Report (Various Issues)

APPENDIX 10:

NIGERIA: MONETARY AND CREDIT DEVELOPMENTS, 1986 -1988 (₦ MILLION

	1986	1987	1988
Credit to Domestic Economy	36820.3	41390.8	52201.6
% Growth	12.7	12.4	26.1
% Target	8.7	4.4	8.1
Credit to Private Sector	17365.0	19125.8	23247.4
% Growth	26.7	10.1	21.5
% Taget	12.8	8.4	13.3
Credit to Government Sector	19455.3	22265.0	28954.2
% Growth	2.5	14.4	30.0
% Target	5.9	1.5	2.5
Money Supply (MI)	12728.3	14905.9	21446.4
% Growth	-4.1	17.1	43.9
% Taget		11.8	15.0
Money Supply (M2)	24216.0	29994.6	36843.5
% Growth	1.7	23.9	32.8

SOURCE: CBN ANNUAL REPORTS (VARIOUS ISSUES).

APPENDIX 11:

FOREIGN EXCHANGE EARNINGS AND DISBURSEMENTS, 1981 -1988

YEAR	INFLOW	DISBURSEMENT	
	OIL (US$ MILION)	TOTAL (US$ MILLION)	DEBT SERVICE (US$ MILLON)	NET AVAILABLE TO SERVICE THE ECONOMY
1981	17,471.5	21,449.2	857.4	20,591.8
1982	12,178.5	14,951.2	1,151.6	13,799.6
1983	10,192.5	11,679.2	1,845.5	9,833.7
1984	11,016.1	12,121.4	3,455.1	8,666.3
1985	11,367.2	12,310.2	4,180.4	8,129.8
1986	5,742.5	7,204.1	2,127.2	5,076.9
1987	4,659.3	6,593.7	1,567.0	5,026.7
1988	4,851.5	6,418.3	1,953.1	4,652.2

SOURCE: (a) CBN Annual Reports (Various Issues)
(b) IMF International Financial Statistics Various Issues
(c) World Bank, World Tables 1989/90
(d) UN's National Accounts Statistics 1985.

FIG.3 TREND OF NOMINAL EXCHANGE RATE

(SEPT. 1986 – DEC. 1989)

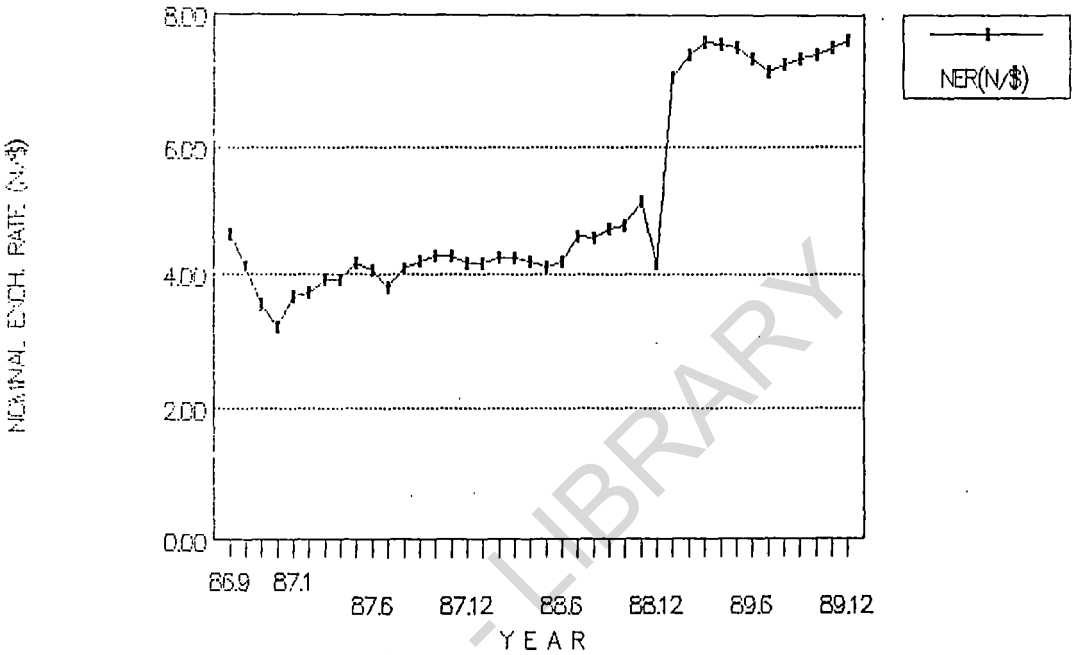

FIG.4 TREND OF REAL CONSUMER IMPORT AND REAL EXCHANGE RATE, 1963 – 1989

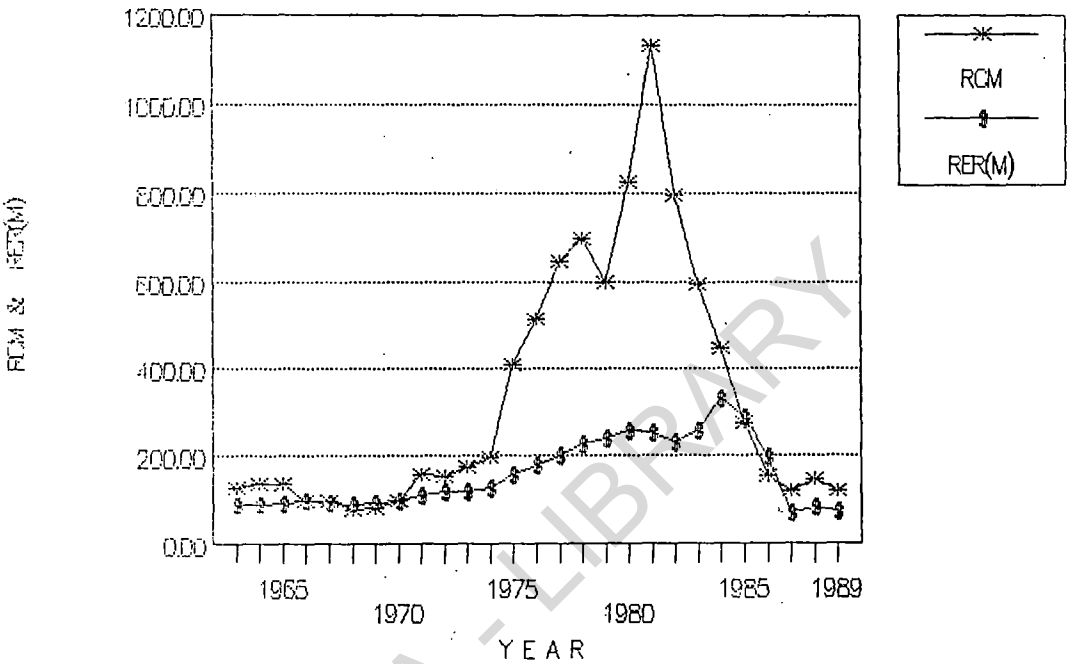

FIG.5 TREND OF REAL REAL NON OIL EXPORT AND REAL EXCHANGE RATE,1963 – 1989

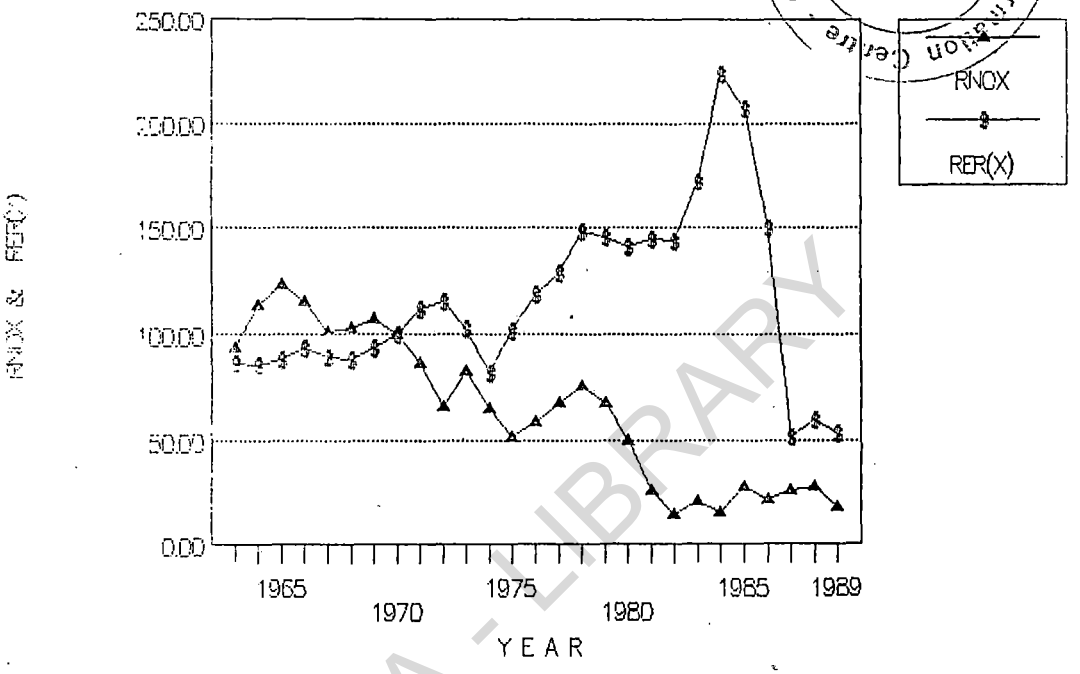

FIG.6 TREND OF REAL NET – EXPORT AND REAL EXCHANGE RATE,1963 – 1989

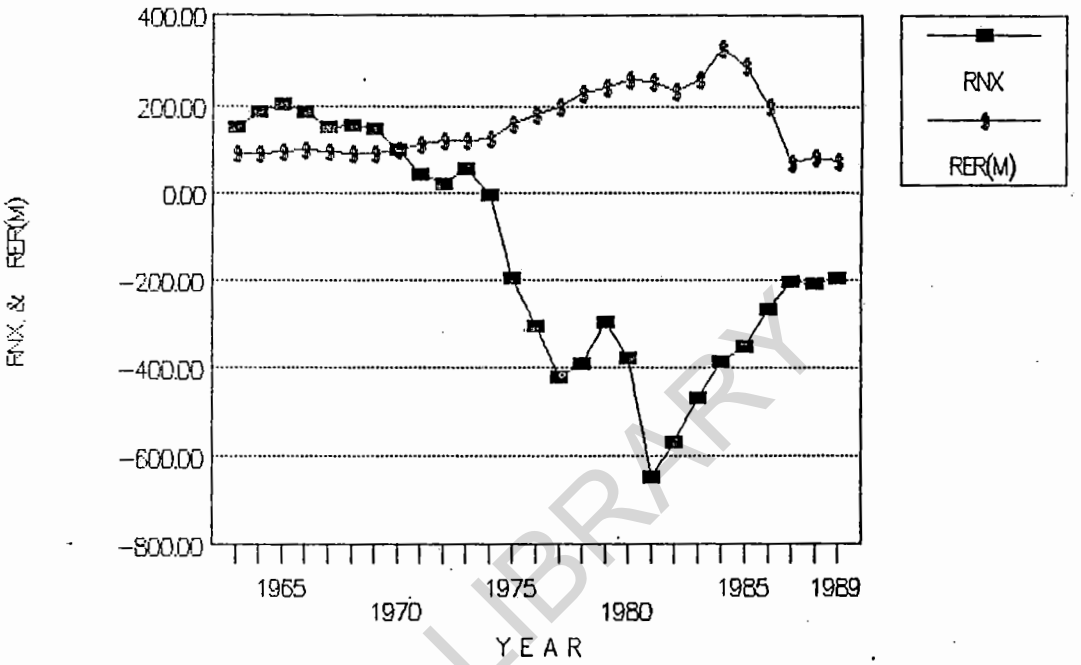

FIG.7 TREND OF REAL INTERM. IMPORT AND INDEX OF MANUFACTURING, 1963 – 1989

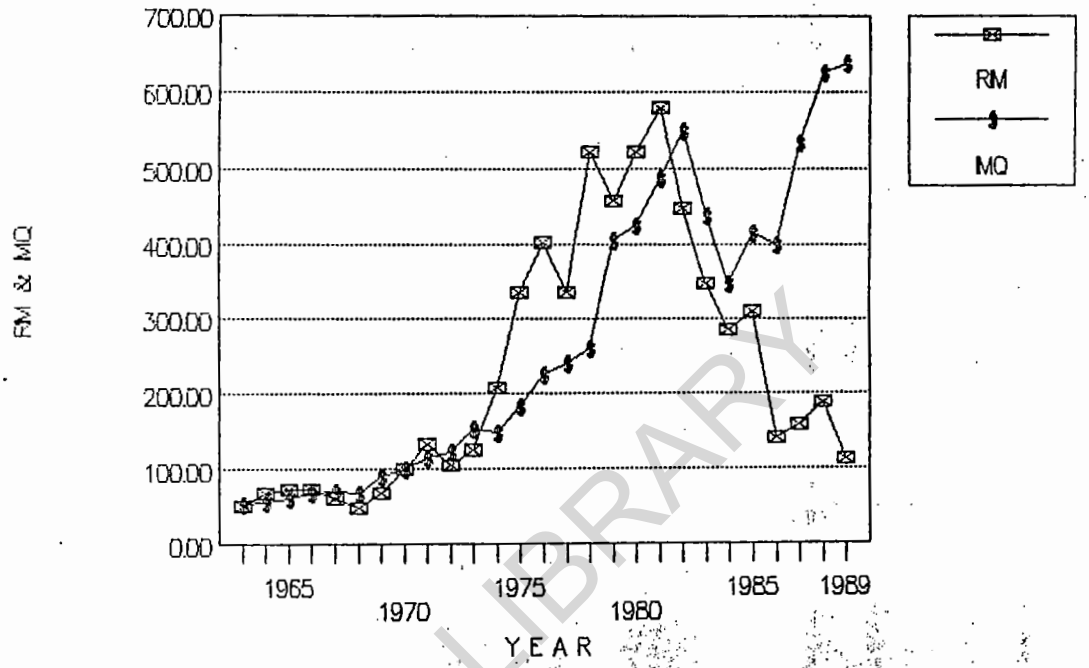

FIG.8 TREND OF REAL CAPITAL IMPORT AND GROSS FIXED CAP. FORM., 1963 – 1989