DIRECT PRIVATE FOREIGN INVESTMENT AND ECONOMIC GROWTH IN NIGERIA (1980-1996): AN EMPIRICAL INVESTIGATION

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Declaration

I hereby declare that this thesis, titled " Direct Private Foreign Investment and Economic growth in Nigeria (1980 - 1996). An Empirical Investigation " is based on a research conducted by me. It has not been presented in any other institution for the award of a higher degree. All references in this work have been duly acknowlegded at the end of the thesis.

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This thesis titled, " Direct Private Foreign Investment and Economic growth in Nigeria (1980 - 1996). An Empirical Investigation " by GARBA, Shehu Tijani meets the regulation governing the award of the degree of Doctor of Philosophy of the Department of Economics, Ahmadu Bello University, Zaria and is approved for its contribution to scientific knowledge and literary presentation.

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Dedication

This work is dedicated to Alhaji GARBA, OLA ABUBAKAR.

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Abstract

This study has attempted to analytically and empirically investigate the impact of direct private foreign investment on the economic growth process of the country over the period 1980 -1996. The Data used in this study were time series data derived from secondary sources.

Obviously, the great potentials of direct private foreign investment for accelerating the pace of economic growth cannot be overemphasized. It not only helps fill the gap between domestically available supplies of savings, foreign exchange and government revenue but also encourages the inflow of technology and skills.

Based on the recognition of the relevance of private foreign investment in economic growth, ever singe the attainment of political independence in 1960, various strategies involving policies and regulatory measures have been pursued by the Nigerian government geared essentially towards the promotion of the inflow of private foreign investments into the country.

The objectives of this study basically are to verify and identify the nature and extent of private foreign investment in Nigeria, evaluate the country's past and current efforts designed to promote foreign investment, analyse the flow of such external resources and highlight some lessons of experience and impact of foreign investment on growth.

The results of the empirical investigation revealed that direct private foreign investment in the identified Manufacturing sub-sectors based on the International Standards of Industrial Classification (ISIC) in this study has contributed positively though not on equal proportion to productivity growth, national income, private and government savings.

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CHAPTER ONE

INTRODUCTION

1.0 Background To The Study

Before independence, Nigeria's economic development was anchored basically on agricultural and primary exports. Manufacturing was an insignificant proportion of the Gross Domestic Product (GDP). On attainment of independence however, purposive efforts were made to alter the structure of the economy by increasing investment in the manufacturing industry.

Since the attainment of political independence in 1960, and for a long time before then, specifically, from the early 1950's, virtually all the productive sectors of the Nigerian economy and particularly the manufacturing sector were dominated by foreign investments and therefore ownership.

Ever since then, the planning and programming of Nigeria's development have been tied in varying degrees to the prospects of foreign assistance in the form of financial grants, loans, technical assistance and direct private foreign investment in order to develop the Manufacturing sector of the economy.

Accepting the fact that Nigerian lacked sufficient capital, technology, managerial skills and entrepreneurial initiatives to function effectively in various sectors of the economy , public policy was dominated by the design and application of diverse incentives directly aimed at attracting foreigners, their capital, technology and skills.

It would be recalled that, about 50 percent of the planned capital expenditure in the first National Development Plan (1962-1968) was expected to be financed from external grants, loans, technical assistance and direct private foreign investment. However, only about 25 percent of the projected inflow of external financing actually materialized (Oyaide, 1979). This was perhaps why the Second National Development Plan (1970-74) reduced the role of external finance and limited it to 25 percent. The Third Plan, 1975-1980 sought foreign investment to the tune of N5 billion over a period of three years (Oyaide, 1979).

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Nigeria, in 1978 alone attracted close to N2 billion Eurodollar loan. The money was arranged through the participation of some 80 Europeans, Americans and Japanese banks under the direction of Chase Manhattan Bank of New York. In the twelve year period, 1962-1973, Nigeria absorbed foreign investment in excess of N11 billion (Oyaide, 1979).

Also a direct analysis of paid-up capital or equity capital in the Nigerian manufacturing sector shows that of the three main group of investors - private domestic, Private foreigners and Nigerian Government - the foreign category clearly dominated the scenes from 1963 to 1972; its proportion ranging from about 58 to about 70 percent.

The necessary centrality of PFI as the prime mover in the growth process of the Nigerian economy has often been emphasized by the traditional neo-classical theory of the determinants of the growth process. External financial resources particularly as reflected by PFI is believed to not only help fill the gap between domestically available supplies of savings, foreign exchange and Government revenue but also encourage the inflow of technology and skills (Todaro 1977).

On similar ground, traditional argument for direct foreign investment, is that such investment benefits the developing countries by filling the gaps between the domestically available supplies of earnings, foreign exchange and government revenue. In addition, gaps in technological knowledge, skills, entrepreneurship, managerial and supervisory personnel, organizational experience, innovation in products and production techniques, etc are presumed to be partially or wholly filled by foreign investors. In anticipation of these benefits,the Less Developed Countries

(LDCs) that are very keen to industrialise have often offered very generous incentives to foreign investors.

Foreign capital can be said to have penetrated the Nigerian economy in two historical phase (Obadan, 1992). The first coincided with the era of colonialism and the export of British capital for the establishment of monopoly rights over cheap sources of raw materials and the protection of lucrative suppliers market. The second phase relates to the post-independence neo-colonial period during which British dominance and monopoly rights have been aggressively challenged under the imperialist hegemony of the U.S.A in vital sectors as oil, manufacturing, business services, commerce, construction and communications.

A Federal Government of Nigeria Publication on Non-Debt-Creating Finance for Increasing Investment and Financial Flows, a Country Paper, volume 1 prepared by Federal Ministry of Industry in 1993 , showed that many developing countries now actively solicit foreign investment because they have discovered that foreign investment is an engine of growth for economic development. Specifically direct private foreign investment has been traditionally found to help attract skilled labour, entrepreneurship, technological know how and direct flow of foreign resources, including in particular, foreign exchange. When these factors flow into the economy

they augment the existing domestic resource base and thereby promote development (FGN. 1993).

Foreign investments put national savings to productive use, caters for future job creation requirement, generates income and perpetuates the process of growth. In both developing and developed countries of the world, the volume of investment as well as the quality and judicious selection of investment projects are critical to economic growth and development. The flow of foreign investment to complement domestic investment is a major focus of policy in all countries of the world (FGN. 1993).

It is this recognition of the relevance of private foreign investment (PFI) that , ever since the attainment of independence in 1960 that various strategies involving incentive policies and regulatory measures have been pursued by the Nigerian Governments geared essentially towards the promotion of the inflow of private foreign resources into the country.

In accordance with the Industrial Policy objective and strategies and in recognition of the vital role a virile industrial sector can play in the growth and development of the economy, the Government of Nigeria has put in place, a number of measures aimed at improving the investment climate

and business opportunities in the country. The major issues which in the past militated against foreign investment in the country (i.e. the restrictive and cumbersome regulatory environment under which the economy operated) were specifically addressed. As part of the efforts towards improving the investment climate in the country, the Industrial Development Coordination Committee was established by decree No. 36 of 1988 to facilitate and encourage the inflow of foreign capital into Nigeria by centralizing and simplifying procedures for the grant of all pre-investment approvals . This development addressed the hitherto cumbersome process of obtaining pre-investment approvals which were characterized by delays and frustrations on the part of new investors.

As a further measure to encourage foreign investment in the Nigerian economy in recognition of the fact that Government was no longer interested in being in control of the commanding heights of the economy, Government introduced the Nigerian Enterprises Promotion Act of 1989 which reviewed the ownership structure of Nigerian enterprises thereby making it possible for foreigners to own up to 100% equity in any business in Nigeria provided that their equity participation in such business is not less than N20 million (FMI. 1993).

Other measures taken as a result of the changing focus of the Nigerian economy and the role foreign direct investment was expected to play included, the repeal of the indigenisation legislation of the 1970s, which limited foreign participation in the capital market and the promulgation of the Nigerian Investment Promotion Commission (NIPC) Decree number 16 of July, 1995 to liberalise the investment climate in the country. The Decree allows unrestricted foreign interest in Nigerian quoted companies and accords foreigners and residents the same rights, privileges and opportunities of investment in Nigerian capital market. In addition, the Exchange Control Act of 1962 was repealed and the Foreign Exchange (Monitoring and Miscellaneous Provisions) Decree was promulgated in 1995 to further ease the mechanism for foreign investment flows.

The Nigerian Investment Promotion Commission (NIPC) was also established as a successor to the Industrial Development Coordination Committee (IDCC). NIPC was set up as a one-stop port of call to a potential foreign investor in the country and central investment approval agency for both foreign and indigenous investors. The objective was to remove the institutional bottlenecks and bureaucratic hinderances that tended to discourage the inflow of foreign investments into the economy.

The NIPC issues guidelines and procedures, which specify priority areas of investment and prescribed incentives and benefits which are in conformity with Government policy. For the purpose of promoting identified strategic or major investment, the NIPC may in consultation with appropriate Government agencies, negotiate specific incentive packages for the promotion of investment.

Also, with the repeal of all existing laws that inhibited competition in certain sectors of the Nigerian economy and consequently, the promulgation of the Public Enterprises Promotion and Commercialisation Decree in 1988, private sector investors (including non-Nigerians) are encouraged and free to participate in and compete with government-owned public utility service corporations such as telecommunications, electricity generation, exploration of petroleum, export, refineries, coal and bitumen exploration, hotel and tourism which are now open to private investors since the promulgation of the Decree.

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However, of recent, there has been strong debate over the issue of privatisation and commercialisation of public enterprises and the role of private foreign investment in this dispensation. Privatisation is being justified by its proponents on the grounds that government parastatals have been inefficient, most of them operating at a loss and

constituting a serious drain on government resources. Privatisation, it is hoped, would enhance efficiency in resources allocation; reduces government spending and enhances revenue; improves performances of the affected enterprises; spread the ownership of privatised enterprises; assists in eliminating the fiscal crisis of the Nigerian state and enhances the scope for foreign direct investment.

Opponents of privatisation usually hinge their arguments on the ground that there are certain strategic industries such as defence and security, power and energy, health, public utilities, education and others, the privatisation of which would not only put the prices of goods and services produced by these sectors beyond the reach of the common man, but would also threaten such commonly shared values and ideals as national security and sovereignty. They argue that privatisation is mere transfer of economic (and by extension, political) power from state sovereigns to corporate sovereigns.

Some opponents go as far as expressing the fear that while the present millennium has been characterised by colonization of some countries by others, the next would witness the colonization of whole continents by multinational corporations. Other arguements include concentration of wealth in the hands of the already rich and the potential for

retrenchment of workers in the privatized industries.

1.2 The Research Problem:

In Nigeria, both the volume and the quality of productive investments, especially since the early 1980s, raise concern. The flow of foreign investment into the country has been very minimal despite Nigeria's existing natural attractions to investors such as larger domestic market, a geographical location capable of taking advantage of regional and continental markets, substantial natural resources, relatively cheap labour and a considerable amount of entrepreneurial talent. Data from Central Bank of Nigeria, Statistical Bulletin Volume 2 Number 2 (1991) shows that Net foreign private investment as a percentage of the Gross Domestic Product (GDP) was not only low but also on the downward trend in the decade of the 1980s. It declined from about 0.94 per cent in 1980 to 0.27 percent in 1981; but subsequently increased to 3.15 per cent in 1982. Thereafter, it fell to 0.46 per cent in 1985. It rose to 3.47 per cent in 1986 but has been on the decline thereafter. Moreover, Gross Domestic Investment (GDI) as a percentage of GDP has been on the decline since the beginning of the 1982 economic crisis. GDI fell from over 24 per cent in 1981 to 14.35 per cent of GDP in 1983, 10.15 per cent in 1986, and to 9.51 per cent in 1989. A considerable investment effort is therefore, needed to develop new markets, and to ensure that present methods of production,

the sourcing of inputs, and the composition of output reflect the new price signals.

The great potentials of direct private foreign investment for accelerating the pace of economic progress of developing countries cannot be overemphasized. It brings capital, know-how and foreign exchange which these countries lack so much. But it has often been alleged that direct private foreign investment brings along the possible emergence of a dual economy and later balance of payment (B.O.P) problem, which act to offset the benefits. However, among economists and policy makers alike there are disagreements as to the impact of direct private foreign investment in developing countries. While some attest to its developmental role others see it in a different way.

Even though most discussions on Nigeria's economic development tend to ascribe an important role to private foreign investment there have been little or no quantitative studies to evaluate the impact of private foreign investment on the economy.

A study such as this is not only necessary for formulating and appraising official policies towards foreign investors, but also provide the basis for a more objective attitude towards foreign investors.

1.3 Objectives of the research:

Expectedly, Direct private foreign investment is supposed to play a positive and significant role in the growth process of any nation. However, in a nation like Nigeria where economic and political instability is the order of the day scanty and inconsistency of data makes it difficult to assess the role of direct private foreign investment in economic growth of the country. It has been shown that the Nigerian economy is neither dynamic, nor self reliant. An empirical exercise conducted by Kwanashie (1984) to test for structural changes in the economy, lent empirical weight to the observation that the behavioural relationships that are used to describe the structure of the economy have remained the same and the same situation still obtains. Direct private foreign investment might not play its expected role and even if it has, what is the magnitude of this role ? In other word, in a quantitative way, what is the contribution of Direct private foreign investment to the growth process of the economy ? Also, if Direct private foreign investment has not effectively played its role in the growth process, what are the factors responsible for this situation ? What are the various levels of governments doing to stimulate or deter foreign investment? What measures can be taken to encourage investments? What is likely to be the future trend of investments in Nigeria ? These and others are some of the problems this study intends to probe.

In a nutshell, the aim of this study is basically to examine the contribution of direct private foreign investment to the economic growth and development of Nigeria over the period 1980-1996. In order to do this, we concentrated on the impact of direct private foreign investment in the manufacturing sector of the economy on economic growth. We shall do this by measuring the impact of direct private foreign investment in the manufacturing sector using productivity growth, Income, private and government savings as our indicators of growth.

It is in this light that this study basically addresses itself to the following specific objectives:

a. To verify the nature and extent of private foreign investment in the manufacturing sector of the Nigerian economy over the study period (1980-1996).

b. To measure the macro-economic impacts of private foreign investment (P.F.I) on some macro-economic indicators of the Nigerian economy. Viz : Productivity growth, Income in the economy, private savings and government savings.

c. To make a comparative analysis of these impacts among the four factors considered by measuring their cumulative effects.

d. To analyse the implications for economic policy of the observed contributions of Direct private

foreign investment to economic growth.

e. To trace and quantify changes in Nigeria' economic growth and development resulting from direct private foreign investment in the manufacturing sector.

f. To make recommendations that will help formulate proper policies for foreign investments in Nigeria.

g. To evaluate the country's past and current efforts designed to promote foreign investment, analyse the flow of such external resources and highlight some lessons of experience.

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1.4 The Methodology

The fundamental and substantive focus of this study is to employ a unique sub-sector level dataset to test for positive or negative spillovers as a result of the presence of direct foreign private investment in the manufacturing sector of the Nigerian economy and its implications on economic growth. The spillovers are : productivity growth in the private foreign investment in the manufacturing sector, income in the economy (or gnp) private savings and Government savings. The period covered in this study is from 1980 to 1996.

1.5 Propositions

In the light of the above , it will be worthwhile once more to state the specific and fundamental question on which

this study rests, and that is: Are the impacts of direct private foreign investment in the manufacturing sector of the Nigerian economy on balance, negative or positive?

The basic overall proposition of this study is that direct private foreign investments in the manufacturing sector of the Nigerian economy contributes positively to the growth of the economy. However the magnitude of this impact is the fundamental question this study addresses.

However, in order for us to be able to test this proposition, we need a methodological approach which would capture the fundamental points:

(a) That direct private foreign investment in the manufacturing sector of the Nigerian economy over the period 1980 - 1996, has a positive impacts on productivity growth, national income, private savings and government savings thereby enhances economic growth.

(b) Show the magnitude of these impacts on the economy.

In doing this, we shall employ the methodologies adopted by Mona Haddad and Ann Harrison (1993) Bosch and Secchi (1974) and others.

Mona Haddad and Ann Harrison (1993) employed a rather simple regression equation derived from the conventional production function equation to test and analyse the impact of direct private foreign investment on productivity in Morrocco.

1.6 **Justification:**

Undoubtedly, a generally known situation is the continous widening gap between the developed and developing nations of the world. While the developed nations continue to grow as a result of being able to generate capital for developmental purposes, the developing nations find it very difficult to attract capital largely because of their economic and political instability. A considerable effort is therefore required by developing nations to catch up and reduce this widening gap. One of the ways this could be done is to seek or attract foreign investment. In the present economic and political situation Nigeria finds itself, a strategy of development broadened to incorporate to a large extent foreign investment should be the focus of the government. This study tries to look at how this could be done.

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Also unlike the earlier historical episodes of international investment the widespread practice of national economic planning in a developing country like Nigeria is moving the problems of foreign investment into a new context. To appreciate more fully the issues that are emerging, we need

analytical and empirical frameworks for appraising how a developing country like Nigeria might attain the double policy objective of encouraging a greater inflow of capital while, at the same time, obtaining from this capital a more substantial contribution to the country's development programmes.

Obviously, the subject of impacts of private foreign investment in Nigeria, is vast, enormous, complicated and controversial. It is also a subject that although evoking much speculations over the years, has received less sustained and systematic attention in terms of data collection and analysis than many other aspects of economic developments.

It is specifically against this background that we view the analysis of the macro-economic impacts of private foreign investment (P.F.I) in the manufacturing sector of the Nigerian economy as being very crucial for not only policy appraisal and formulation, but also, as a motivating force for future research consistent with the socio-economic and political aspirations of not only Nigeria but also other developing countries.

1.7 **The Data: Sources:**

The data that were used in this study, are basically time series data. The major sources of these data are the publications of the Federal Office of Statistics Lagos, and

the Federal Ministry of Industry. Annual Abstracts of Statistics, the National Development Plans, Statistical journals published annually and quarterly by the Central Bank of Nigeria that is, the Annual Report and Statements of accounts, and the Economic and Financial Reviews. Also used were the Manufacturing Association of Nigerian (MAN) publications of several years.

Other equally important sources of data are International Monetary Fund (I.M.F), Financial statistics (Monthly bulletin) various issues. United Nation Yearbook of international trade and statistics various issues. Seminar papers and available journals relevant for this study.

1.8 Scope and Limitations of the Research:

The basic limitation this study encountered was the dearth of data. However, where appropriate data were not easily accessed or completely unavailable, appropriate proxies were adopted to get the relevant information needed.

In embarking on a study like this, certain restricting and limiting factors to such study and which are of crucial nature in considering the scope of such study, should first be taken care of. First, one is tempted to be wary of availability of data . Secondly, one faces the dilemma of whether to try and dig deeply into one or two major aspects of

the impacts, or to aim at a more comprehensive analysis which of necessity will be less penetrating.

In this respect, having in mind the possibilities of limited statistical data available for the evaluation of the macro-economic impacts of Private Foreign Investment (P.F.I) in the manufacturing sector in Nigeria, consideration was given to the research findings already available. On this basis, it was decided to concentrate on a more comprehensive examination of the impacts, limiting ourselves to the period 1980-1996. Furthermore, the approach was at a macro level and the discussions were both qualitative and quantitative.

The basic limitation faced in this study as mentioned earlier was the inadequate or complete unavailability of required statistical data. This, though a practical problem, was nevertheless a serious one. Even relatively straight forward descriptive information on the major characteristics of the flows and stocks of private foreign investment in the country was hard to come by.

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These limitations notwithstanding, this study provided not only a worthwhile evaluation of the part private foreign investment has played in Nigeria's economic development, but also, a good background and a basis for appraising past and current official policies towards foreign investors. It also

provided relevant background for optimizing future decisions on this important question.

1.9 Organization of Work:

In this Thesis, chapter one presents the research problem, objectives of the study, justification, methodology and sources of data, scope and limitation of the research and finally, the organization of work.

In chapter two, we reviewed existing literature on the topic. Here, we are concerned basically with establishing the theoretical and empirical foundation for the research.

Chapter three comprised background information on the origin of direct private foreign investment and the characteristics of direct private foreign investment, all in Nigeria. Sectoral distribution of direct private foreign investment as well as direct private foreign investment in the Manufacturing sector were discussed here. Also, we looked at some general aspects of direct private foreign investment in Nigeria, such as : the situation of direct private foreign investment in Nigeria, the pattern and direction of changes of direct private foreign investment, trends in direct private foreign investment flows, economic policy framework and incentives to foreign investors, main factors and impediments to direct private foreign investment and emerging strategic

direction.

Chapter four is concerned with establishing the theoretical framework upon which this study was based.

Chapter five presents the methodological approach to the study and the presentation of model that was used.

In chapter six, we analysed the results obtained from our empirical investigation in chapter five.

In chapter seven we presented the summary, the conclusions and the recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction:

It has for long been recognized that foreign investment can play a major role in stimulating national economic growth and development of any country, and Nigeria is no exception. Through the establishment of large manufacturing concerns they could help meet the country's local demands and, with further expansion, create the necessary base for the country's export trade. They could act as mobilizers of local capital and entrepreneurship. Through research and adaptation, they could help in harnessing and refining local raw materials for incorporation as inputs of production and thus create the necessary technological and industrial base for the country.

Various authors have shown that not only has the " take off" stage in the development of many countries been considerably influenced by capital imports. When this same capital embodies or is accompanied by technological and managerial expertise it can decisively effect the whole course and framework of economic progress.

Foreign direct investment traditionally attracts skilled labour by way of entrepreneurship, technological know - how and direct flow of foreign resources, including in particular,

foreign exchange. When these factors flow into the economy, they augment the existing domestic capital base.

Foreign Direct Investment (FDI) is not only a way of introducing foreign capital and skilled labour into an economy, but it is also a means of bringing in technological know - how, raising efficiency and competitiveness, as well as enhancing export earnings. To this end, host country governments have always taken necessary steps to create competitive environment for foreign investment.

According to most neoclassical economists, not only does foreign investments invariably accelerate the rate of economic growth in developing countries, but insufficiency of it could lead to a "sudden death" of the economy.

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However, notwithstanding the various accolades that have been given to the role of foreign investment in the growth and development of many nations in the literature, some authors argue that direct foreign investment in the under-developed and developing countries were being made with the specific objective of sheer exploitation. It has been suggested that foreign capital in the under-developed and developing countries was foreign only in the geographical sense of the term, otherwise, it has been part of the machinery of the capitalists to exploit wherever it was easier for them to do

so. Suggestions have been made that foreign capital which flowed to the under-developed countries was used for the purpose of building up economic enclaves, such economic enclaves were never integrated into the economic system and consequently they never brought about any advantage to them (Dunning, 1970).

This chapter of the study presents a summary of existing literature on this important topic. An effort is made here to give, first of all a schematic presentation of the theories dealing with international movement of capital, followed by the basic determinants of private foreign investment and the impact of such investment on economic growth of the receipent country. The later part deals with the theoretical framework upon which this study rests.

2.1 **The Historical Development of Private Foreign Investment:**

Initially, and really, until world war 1, the international movements of capital globally consisted essentially of flows of portfolio capital from a few developed European nations to the rest of the world. These movements were determined mainly by international differences in rates of interest. Direct foreign investment was relatively unimportant and was generally limited to the exploitation of some mineral resources in less developed areas. Since world war 11 however, there have been rapid expansion of

international capital movements and enormous growth in private foreign direct investments (Giorgio, 1973).

There have been various theories propounded to explain the motivating forces behind international movements of capital and their macro economic effects on the receiving economy. One of the foremost of these theories is the classical theory of international investment as propounded by various authors. They were largely concerned with explaining the transfer process of capital movements and their effects on the macro-economic parameters such as money supply and the level of economic activity of the lending and borrowing countries (Dunning, 1970). Specifically, in the classical theory, international movements of capital were generally considered to benefit both the host and the investing countries.

Another axiom of the classical theory is that maximization of world output would automatically be brought about by private enterprises on the basis of profit expectations. This belief is based on the assumption that the current return on private capital investments or rather the even less perfect criterion of current expectation by fallible investors of the total private return on present investment over a long period provides a sufficient index of the desirability of the international movements of capital from

the point of view of both the lending and the borrowing countries (Dunning, 1970).

However, in recent years, the classical theory of the distribution of gains between the recipient and the donor countries of private foreign investment, as it were, has increasingly been questioned on several grounds. The discussion has not been restricted to welfare consideration in investing and host countries alone, but in addition a number of other topics have attracted considerable attention. Foremost of which have been Productivity growth, Income or Gross National Product (GNP), Savings, Employment and Balance of Payment (BOP) effects of private foreign investment (Bos, Sanders and Secchi 1974)

One of the first group of economists who took exception to the classical approach to analysing international movements of and effects of private foreign investment was H.W. Singer (1950) who in his well-known study reached the conclusion that by and large, direct private foreign investments have been very beneficial to the investing countries, but have had no effects on the host countries. This conclusion is reached mainly through " terms of trade" argument and in addition through arguments that, at least until recently foreign investments were not really integrated in the structure of most developing countries economies and consequently were in

an economic sense domestic investment on the part of the industrial countries (Bos, Sanders and Secchi 1974).

Singer's analysis leads to the conclusion that classical presumption about mutual benefits can only be reached on the basis of static comparative advantages which may not be appropriate with respect to private foreign investment (PFI). What is needed according to him is a dynamic approach , which in Singer's analysis shows that the benefits of private foreign investment have accrued to the investor countries, mainly because of the fact that rising productivity gains have been passed on to the investor country, rather than having accrued to the host country.

Singer's article on the benefits of private foreign investments has generated serious controversies. Macdougall (1960) concludes on a line slightly different from that of Singer, and that is that unlimited private foreign investments may not be in the self interest of the recipient country.

Utilizing largely geometric proofs, professor Macgdougall (1960), in a partial equilibrium analysis, employed a simple aggregate production function approach in which output in the host economy is a function of the inputs of labour and a homogenous stock of capital to derive his propositions. Foreign investment is conceived of as a marginal addition to

this stock of capital, and he demonstrated that the primary impact of foreign investment on the host economy is that the real wage of domestic labour is raised. In addition, he proved that the inflow of foreign investment may not be significant in raising the real wages of a given amount of labour but more importantly, would also allow aggregate employment to be significantly raised.

Professor Macdougal (1960) also hypothesized that if there are no large and rapid fluctuations in the inflow of new foreign investment and the exchange rates are fixed, an increase in foreign investment by swelling the profits that have to be repatriated will not necessarily have a negative impact on the balance of payments. If, on the other hand, the trade balance tends to worsen with a given flow of foreign investments, recurring crisis will, in any case, be likely.

However, the additional foreign capital inflow would not necessarily aggravate them, it would alleviate them. So long as the additicnal foreign investment is not "import-creating" or "export-discouraging" the higher outflow of investment income would be counter-balanced, or more than counter-balanced, by the higher capital inflow and by the favorable impacts on the balance of payments resulting from the extra production - a phenomenon which he referred to as the "import-saving" or "export-creating" effects of foreign investment.

Authors such as Balough and streeten (1960) and Kemp (1962) also take an opposite view from that reached by Singer by pointing out that foreign investment abroad, if proceeding at high rates, could be detrimental to the investors domestic investment as resources would now be concentrated abroad at the expense of the former which may be harmful for the investing countries in terms of benefits to be derived from domestic investment.

Generally concern with the effects of private foreign investment on the position of the investing country, and more in particular its balance of payment consequences, was the origin of the Hufbeaur/Adler (1968) study and the Reddaway report (1968). The former was directed towards an empirical investigation of the effects on the U.S balance of payments of manufacturing investment abroad, the latter was concerned with the effects of U.K. foreign investment abroad.

A similar view expressed by the Neo-marxian doctrine of economic imperialism is that advanced capitalist economies are usually under the compulsion to export capital to less developed countries (Ldcs) and in this way dump their surplus produce abroad. This is to keep the internal economy operating at a prosperous and profitable level of economic activity in order to promote their growth and developments. (Nurkse,

1962).

However, various views have been expressed by various authors concerning this marxian doctrine. This thesis concerning the deep-seated urge for mature capitalist economies to export capital abroad was confirmed by Keynesian economics. For some times after the world war of 1939-1945, there seemed to be a widespread belief in the underdeveloped countries that sooner or later the United States of America (U.S.A.) would simply have to start exporting large amounts of capital to them in order to keep its own economy happy and prosperous (Nurkse , 1962).

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Again, under the impact of the same Keynesian economics, capital exports have come to be associated with an increase in effective demand and employment in the capital exporting countries thereby given a sort of support to the marxian thesis that the capital from the advanced countries cannot but flow out to maintain a high rate of profits and keep the capitalist system intact (Nurkse , 1962).

Consequently, if there were to be a compulsion of this sort, it would be beneficial to all concerned and there is nothing bad about it. But the fact is that this sort of compulsion is not obvious at least from what has happened in practice as regard to the flow of foreign capital. The

countries which want to import capital have to provide incentives and create favorable conditions so that capital might be available to them.

Nurkse (1962) writing on Keynesian economics, expressed the view that the impact of Keynesian revolution on the theory of foreign investment was to direct attention from fundamental long-run matters relating to capital as a factor of production and to favor incidental matters important only in the short-run, namely, the effects of foreign investment on the degree of employment in the advanced creditor economies. Under the impact of the Keynesian economics, capital exports came to be associated with an increase of effective demand and employment in the capital exporting countries, and indeed, in the universe as a whole.

From Keynesian economic perspective, foreign investment is fundamentally a means of improving the distribution and use of the world's productive resources. Keynesian economics by substituting an armoury of domestic policies of economic stabilization for the income and employment effects of foreign investments, clears the approach to the developmental aspects of the international movements of capital and foreign investments which ought to have been in the center of the stage from the start. Capital movements can at least be thought of primarily as movements of a basic factor of

production.

Although, it is true that the Keynesian analysis brought out the favorable income and employment effects of foreign investments upon the economy of the lending nations, it is important to realise that Keynesian economics itself devised a system of fiscal and monetary policies for the maintenance of a steady level of good employment in any advanced industrial country without the aid of foreign investment. In theory, the income and employment effects of foreign investment, which never was more than an incidental effect of the capital transfer, has become quite unimportant as a means of domestic economic stabilization on the wealthier countries of the world.

In the same vein, the traditional approach (Bos and Secchi 1974) to analysing international capital movements implies a flow of investment funds from countries where capital is relatively abundant to countries where capital is relatively scarce. In other words, it moves from countries with low marginal productivity to countries with high marginal productivity of capital. The host countries in this situation, benefit from the foreign investment to the extent that the productivity of the investment, the income created is higher than what the foreign investor takes out in the form of profits and interest. The investor country benefits to the

extent that the rate of return on its foreign investment through profits and interest receipts, exceeds the rate of return on domestic investment.

In such a situation, as above, international movements of capital are to the benefit of the world economy, and also to all of the individual parties participating. Thus, to some extent the classical and the traditional approaches have certain basic premises in common.

It is however, curious to note that to a large extent recent official and semi-official views on the benefits of private foreign investments are still based on the classical notion of mutual benefits despite the fact that in the traditional approach foreign investment stands for loan investment rather than equity investment, which later gives rise to far more complicated analytical problems. The views have however, not been unchallenged.

From the standpoint of the general theory, the issue of foreign investment as an engine of growth has received only relatively recent attention. The classical economists, primarily concerned as they were with the mechanism of balance of payments adjustment resulting from capital movements, generally dealt with what we might call the export of capital that is, the effects on the lending country; the import of

capital, that is, the effects on the borrowing country, was largely neglected. Concern with the growth problems of developing countries has, however, reversed this neglect in the post war years and the issue has been very much under serious and controversial discussion.

In the early and late fifties, private investment began to be seen as a strategic factor in the development of developing countries. Private foreign capital particularly by multinational corporation was regarded mainly as a source of foreign funds which supplemented domestic savings efforts. Nurkse' (1962) thesis that countries are poor because they are poor and needed large injections of foreign capital became widely accepted.

In a study carried out by Mona Haddad and Ann Harrison (1973) of the World Bank, on positive spillovers from direct foreign investment, with evidence from panel data for Morocco, the authors posit that many countries now actively solicit foreign investment, offering income tax holidays, import duty exemptions and subsidies to foreign firms. One reason they give for subsidizing these firms is the positive spillover from technology transfer to domestic firms. Their study employed a unique firm-level dataset to test for such spillovers in the Moroccan manufacturing sector. They found evidence that the dispersion of productivity was smaller in

sectors with more foreign firms. However, they rejected the hypothesis that foreign presence accelerated productivity growth in domestic firms during the second half of the 1980s. Using detailed information on quotas and tariffs, they also rejected the possibility of a downward bias in estimating technology spillovers because foreign investors may be attracted to protected domestic markets.

It is worth noting that the private investment functions tested in this study is derived from theoretical models formulated for firms in developed countries because such models usually implicitly based their theoretical formulation and assumptions on factors which could apply to both developed and developing countries going through structural adjustment. This model like most models of investment in developing countries assumes a homogenous group of firms operating on competitive product and factor markets under condition of general equilibrium. The basic assumptions of this model are analysed in the theoretical framework.

One other theory relating to foreign investment that has always generated controversies is the "Pure Theory" of international trade and investment which in its familiar Heckscher-Ohlim form generally assumes perfectly competitive markets, identical production functions in different countries and international movements of capital in response to

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differences in interest rates (Sanjayal and Streeten 1977). Its results accords with the general fact that rich countries presumably 'capital abundant' in this model, invest in poor countries which are'capital scarce' (with risks sometimes included as a modifying factor).

However, it hardly provides a complete explanation of foreign investment as distinct from foreign borrowing or portfolio investment. It also hardly provide explanation for the growth of firms possessed of considerable monopoly powers, or of rich countries interpretation of each other by their large firms. Ther is also the issue of transfer of other productive factors, (technology, management and marketing) which are just as great a part of transnational corporations investment as the transfer of capital (Sanjayal and Streeten 1977).

Professors Kemp (1966) elegantly integrated international capital movements within the framework of Heckscher-Ohlim theory of international trade (Odofin 1979). Using a more sophisticated general equilibrium models in his analysis, exports of capital increases the returns on capital invested at home. By increasing foreign incomes, they improve the demand for investing-country exports and, hence, its balance of payments. In addition, free foreign investments equalizes wages and capital returns, the level of total world savings

and investment is raised and, hence, the future level of consumption. In a nutshell, the basic theorem states that both the investing and the host-country gain from international investment and that the welfare of both is maximized (Odofin, 1979).

2.2 The Basic Determinants of Private Foreign Investment (PFI) From international perspective

Mostly, the main line of argument for the factors determining private foreign investment especially as found in the modern theory of direct investment focusses on the parts which allow foreign firms to have higher advantages over the local competitors. One of such line is the argument for growth maximization. The advantages derived from other factors are superior knowledge, superior technology, higher returns, managements skills, knowledge of markets, possible economies of scale etc.

Giorgio (1973) on factors determining private foreign investment alludes that for corporations, other factors besides expected rates of returns and risks may have a crucial role in investment decisions. Citing the modern theory of the firms, he asserts that the major objective of corporations is essentially "Growth", while profit tends to be regarded, at least in the short term and the medium term as a goal in itself. For a corporate investors he argues, the relevant

variable is the expected rate of profit that it could earn by establishing a foreign subsidiaries. This may be a newly established undertaking or a foreign company acquired through a take-over.

Concerning the effect of foreign investment on productivity growth, Berham (1969) in his study arrived at a theory of international investments that was founded on the growth maximization hypothesis discussed in the literature. He concluded: "In sum, the primary stimulus that causes business to expand abroad is the desire for growth. Stubenitsky (1970), in a similar vein, opts for the goal of growth of sales maximization subject to profit constraints.

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Bela Balassa (See Todaro, 1977) also developed a theory that stresses growth rather than profit as the main objective of the firm. He argues that where a matured oligopolistic structure has been established in the domestic market, the firm may be induced to invest abroad because efforts at increasing its share in the domestic market would meet retaliation from other oligopolists. In spite of all the additional costs of foreign investments, expansion in foreign markets is thus less costly than in the domestic market.

The line of argument in the theory developed by Hymer

(1960) and Kindleberger (1969) concentrates on the view that for a firm tc undertake direct foreign investment abroad, it must have advantages over firms of the foreign country. The advantages may be in terms of superior technology, management skills, knowledge of markets, possible economies of scale etc. A common aspect of all advantages of superior knowledge is their character of public goods, that is, the marginal cost of exploiting them abroad through direct investment is practically nil for the firm that owns the knowledge, or at least much lower than the cost the local firm would incur in developing comparable knowledge. In fact, many authors e.g. Johnson (See Kindleberger, 1969) regards the transference of knowledge as the core of the problem of foreign direct investments.

However, superior knowledge as such, is not enough to justify foreign direct investment. The latter must also provide, to the firm, the highest returns. Among the alternative ways of exploiting the superior knowledge in the foreign market include:

(a) exporting products that embody the knowledge

(b) selling the knowledge to local producers in the foreign market, and

(c) producing abroad (through direct investment) products that embody the knowledge.

Based on international perspective Hymer (1960) and Vernom (1971) have also argued persuasively that many investors possess technological or other monopolistic advantages which make their expected returns quite different from any observed average.

Following Hymer (1960), many authors have asserted that foreign investment presupposes some degree of monopoly advantage. Firms entering a new foreign market, it is argued, must have some advantages over local firms in order to overcome the disadvantages that they have in being forced to operate in a new environment. However, such advantages do not necessarily imply oligopolistic interdependence. The advantages could be related to anything from the possession of the clinical knowledge to the services of an especially good manager, neither of which need be related to a particular market structure. However, the fact that most foreign investment is done by large firms in concentrated industries might be important. (Dunning, 1974).

More sophisticated partial equilibrium models within the standard neoclassical two-factor and two-commodity model, examined the theoretical implications of an inflow of private capital from abroad by a firm with monopolistic power. Assuming that the foreign capital receives the full (untaxed) value of its marginal product, the host country is small and

capitalisation rate) and buy the host country firm, whose income stream is capitalised by the market at a lower rate owing to the exchange risk.

An important contribution was also made by Grant (1973) who, in analysing the role of private foreign investment in developing countries, categorised the determinants of private foreign investment into four viz: liquidity, rate of return, output capacity and strategic considerations.

In the case of liquidity consideration, his explanation focuses on the supply of internally generated flows in the investing firm from depreciation and depletion allowances and undistributed profits. As internal cash flows increases he argues, it is suggested that investors increase their new investment outlays. Doubts have however been raised about the importance of this factor as determinant of domestic investment on both theoretical and empirical grounds.

Nevertheless, sufficient grounds remain for believing that this factor may have some influence on investment decisions to warrant its consideration in relation to international investment decision.

Grant (1973) has shown extensively how investors are influenced by profits prospects but quickly pointed out that

investors are guided more by longer - term prospects than by immediate short - term profits. Most companies he concludes are interested in a business that can grow and develop... but the companies must also consider the present. They will not necessarily invest in a country with a long range prospects for potential profits if they must undergo too much initial losses.

Grant's output - capacity (Acceleration relationship) arguments as a determining factor of private foreign investment has been tested by various authors and considerable evidence has accumulated to suggest that private business investment is domestically responsive to changes in the relationship between out put or sales and industrial capacity.

The acceleration relationship assumes a long-run normal desired capital/output ratio and a central tendency to readjust the actual stock of capital as found at any time to the desired stock as defined by this ratio and making allowance for any unused capacity. A similar relationship, conceivably, might hold between foreign direct investment and output or sales and industrial capacity in the host country.

Among the longer-term strategic factors agreed upon by other writers as determining foreign investment include the desire on the part of investors to defend existing markets and

foreign investment against encroachment by competitors, the desire to gain and maintain a foothold in a protected market, or to gain and maintain a low cost source of supply, the need to develop and sustain parent-subsidiary relations, the desire to induce the host country into a long-run commitment to a particular type of technology and know-how, the advantage of complementing another investment, the economies of new product development, competition for market shares among oligopolists and the economies of product differentiation oligopoly-all considerations with indirect longer - term and wider manifestations than the rate of return on investment narrowly defined.

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In another interesting article, professor Findlay (1978) employing a simple dynamic model, proved the hypothesis that the rate of technological change and, hence, the rate of economic growth in a low income country is an increasing function of the gap between its own level of technology and that of the more developed nations which improves at a constant rate and the degree to which it is open to direct foreign investment. The more a country is receptive to foreign investment, the more rapid is the rate of growth of domestic output.

However, the above mentioned views on the determinants of private foreign investments have not gone unquestioned. Among

the objections often raised ranged from the belief that there is little evidence to indicate that the liquidity of the investing firm is a major factor. At the same time, internal cash flows emanating from existing investments in developing countries may have played a significant role in determining the level of foreign investment. Secondly, the current rate of profit, measured on an accounting basis, appears to have little or no association with the level of foreign investment. The same seems to be true of the output - capacity relationship, much emphasized in contemporary discussion of investment theory. The most important determinants of direct investment in the developing countries appears to be a variety of longer - run strategic considerations related particularly to market size and potentials, but in some cases to cost considerations as well (Reuber,1973).

2.3 Macro - Economic Impacts of Private Foreign Investment in the Manufacturing Sector of the Nigerian Economy

Various works have been done on the effects of private foreign investments in the manufacturing sector of the Nigerian economy. Amongst is the study by Akinnifesi (1981) who, in analysing the determinants and effects of private foreign investment in the manufacturing sector, came to the conclusion that ever since the attainment of political independence in 1960, various policies of the Nigerian Government have been geared essentially towards promoting the

growth and development of the manufacturing sector by influencing the trend behavior of private foreign investment.

The reasons for Government's interest, he argues could be rationalized against the facts of economic theory and experience that investment in the manufacturing sector influences the aggregate demand and is therefore an important instrument for promoting growth and stabilization.

Tomori (1980) in analysing the effects of private foreign investment on output, employment and wages in the manufacturing sector also believes that the contribution which private foreign investment can make to industrial output has been a matter of considerable interest in development economics. Some of the conclusions of the proponents and critics of the role of private foreign investment have however not been based on detailed statistical study.

Notwithstanding the limited evidence on which he based his conclusions, Tomori has argued that private foreign investment has made significant contribution to the real income of the manufacturing sector. The positive contribution of foreign investment to the industrial output of Nigeria is seen mainly in the removal of resources gap constraint which inhibits higher output. By providing a combination of machinery, equipment and skill in one package, private foreign

investment tends to increased efficiency of domestic industries which could ultimately lead to higher industrial output.

In terms of employment generation, Tomori argues that the primary reason why many developing countries including Nigeria seek to attract overseas private investment is the desire to use such investment to develop the industrial sector of the economy, particularly manufacturing activities. The encouragement given to manufacturing activities is motivated by the desire to use the sector to expand employment opportunities. This strategy of industrialization for employment creation is a problem of immense proportion in developing countries like Nigeria. The major objective of policy is therefore to reduce unemployment through the creation of income earning job opportunities resulting from a large investment programme.

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However, the policy of employment promotion through increased attraction of foreign investment and rapid industrialisation has been a matter of some controversy in the literature. Critics have argued that the rapid development of the industrial sector particularly the manufacturing sector may not lead to employment generation of the magnitude required by the developing countries like Nigeria. In fact, it is even possible that industrialisation particularly at its

early stage may reduce aggregate industrial employment by displacing existing manufacture.

Tomori (1980), also believes that the attraction of private foreign investment to develop the industrial sector of the economy is not unrelated to raising the industrial wage rate. The countries seeking private foreign investment he argues envisage that increased manufacturing activities will create a greater demand for semi - skilled labour and increase the industrial wage rate which is the situation with the Nigerian manufacturing industries.

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Akor (1987) in analysing indigenous industrial and private foreign investment believes that because private foreign investors have depended on foreign sources for the supply of materials and human inputs from 1970 - 1983, and because with their global corporate power, superior technology, control over the indigenous industries and therefore reaped the substantial parts of the benefits accruing from their investments at the expenses of the Nigerian economy through repatriation of profits.

Another aspects of effect of private foreign investment in the manufacturing sector of the Nigerian economy has to do with the question of contribution of private foreign investment to present industrial technology. It is not

possible yet to know how large this contribution has been in quantitative and qualitative terms. It is however believed that the costs of technology transfer all over the world by private foreign enterprises are growing rapidly. One could possibly say that the technological contribution of private foreign investment to Nigeria's industrialisation is considerable.

Thomas (1976) however believes that the waves of foreign manufacturing companies from overseas have acted to alter the economy of Nigeria. While the pace of what has happened in Nigeria differs elsewhere, it seems evident that private foreign investment in the manufacturing sector of the Nigerian economy has been beneficial. Technology has been transferred, in terms of products, concepts and processes. It has also been observed to varying extent. The observation has been a slow and gradual affair. The results however, should not be underestimated. The change has been substantial.

2.4 Macro - economics effects of Private Foreign Investment on Productivity growth, Income, Private and Government Savings.

As was mentioned earlier, surprisingly little empirical evidence has been brought forward concerning the macro - economic effects of private foreign investment (PFI) on Gross National Product (GNP) or income in developing countries. The

Pearson Report (Pearson, 1969) for example might serve as an illustration of this lack of evidence. Thus, in the absence of detailed empirical studies it is always difficult to assess the contribution of Private Foreign Investment to GNP.

Several direct, but unsuccessful attempts to measure the contribution of private foreign investment (PFI) to national income have been made by various authors. Foremost among these is by Herbert K. May (1970). In his report for the council for Latin america Inc. and by Michael Kidron (1965) who in a well documented case study on India arrives at the conclusion that the income effects of private foreign investment (PFI) in India are negatives partly because of the high costs of capital servicing in the form of profit and technical fees which compare very unfavorably with the interest costs of foreign public debt.

Opponents to private foreign investments (PFI) like the neo - Marxians have sometimes argued that private foreign investment is of exploitative nature in that additional income created through Private foreign investment is usually smaller than what foreign investors tend to appropriate in the form of profits. Proponents of private foreign investments like the neo - kaynesians have however, been quick to point out that this type of reasoning is at fault with economic theory. According to them a foreign investor may appropriate a large

share of the income generated through private foreign investment in some cases perhaps all of it, but never more than that (Dunning, 1974).

The attack on the arguments that foreign investors take out more in the form of profits and other form of payments than their investments contribute to national income is reasonable in the sense that in conventional economics, one expect that factors of production get paid according to their marginal productivity and that more over the factors of production together can never obtain more than they produce. (Dunning, 1974).

In such a situation, the foreign investors, even if he were a monoplolist could never obtain more than the income created through his investments. However, a number of arguments can be given to show that factual conditions do not reflect the world of conventional economics. (Domar, 1946).

Olopoenia (1983) in analysing foreign investment and the growth rate of capital importing countries asserts that for a long time, orthodox development economist has attributed a positive role to foreign capital inflow in the development process of the underdeveloped countries (UDCs). He argues further that foreign capital is often treated both as an additional factor of production and as a supplement to the

national saving efforts of the capital-import country.

Foreign investments he asserts provide the means of relaxing both the foreign exchange and saving constraints on the rate of growth of output in the recipient country and that this is the viewpoint underlying the two - gap analysis of development by Chenery and Strout (1966).

The above point notwithstanding, the controversy in the literature as to the nature of the savings - effect of capital imports is basically of two dimensions. There is the question of which foreign capital affects the level of savings in the capital importing country. Is it the existing stock of foreign capital; the gross inflow of new capital, or the net inflow ? Then, there is the second question of what the sign of the coefficient of foreign capital should be in the savings function. For each of these two questions, there were arguments for and against (Newlyn , 1977)

Haveelmo (1965) has put forward, the argument that there is an inverse relationship between foreign capital inflow and the savings rate of a country. This relationship has been tested, and several times found to be true (Hufbeaur and Adler, 1968). As a matter of fact, it seems quite logical, since a foreign capital inflow, providing additional financial resources, in a sense slackens the pressure put by any

development programme for a savings rate as high as possible, (Helen and You leng, 1969).

However, since Haveelmo (1965) first suggested the possibility that capital import may have adverse effects on the national savings efforts, there has been a lot of controversy in the literature concerning the effects of capital inflow on savings. While the bulk of empirical evidence and some of the theoretical work tend to support the Haveelmo thesis, the controversy is far from being resolved. The possible effect no doubt of capital inflow on the national savings has serious implication for the capacity of foreign investment to accelerate the growth of the capital importing country (Bos and Secchi, 1974). Yet the saving effect of capital imports has been given little or no consideration in the analysis of the growth effect of foreign capital inflow.

Professor Rahaman (1968) put up an explicit analytical treatment of the possibility of a negative relationship between capital imports and domestic savings in his Welfare economics of foreign aid.

The analysis, presented in a general variation problem, is to maximize

$$\int_0^T U(C_t)\,dt$$

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Subject to

$$V_T = V_0 \cdot e^{gT}$$

that is maximize the integral of utility derived from (instantaneous) consumption, C, over a plan period covering T time units, subject to the conditions that over this period gross domestic product, V, should grow at a given rate g.

The exercise brings out that in the absence of policy reactions, mainly through public savings, if one postulates a non-linear welfare function with marginal utility from consumption rising as consumption falls and/or the marginal disutility from capital imports falling as the inflow of foreign capital falls. "Optimum" domestic savings will not necessarily be pushed to its "maximum" irrespective of where this maximum happens to be, and irrespective of where the postulated upper limit to the total inflow of foreign capital happens to be. If this hypothesis is indeed correct, one would expect to find an inverse relationship between capital

imports and domestic savings. This in essence, is the so-called Haavelmo or Decapitalization Hypothesis.

The main political disadvantage of direct investment is that it leads to accelerating foreign ownership of the means of production in the potentially dominant sector and is therefore politically unacceptable in the long run as the solution to the problem of achieving self - sustaining growth. Not only is there political opposition to foreign ownership per se but also to the influence which this entails. Objections to political interference by foreign enterprise in domestic affairs are well founded but difficult to prove. One officially authenticated example is the attempt by the U.S.A 's counter intelligence agency to use the International Telephone Corporation (one of the largest Multi-Nationals) to influence the political situation in Chile in 1970 (Newlyn, 1977).

Existing case studies of Multinational behavior do suggest that foreign investment could be an important source of spillovers. Rhee and Belot (1990) present a number of detailed cases where foreign investors have acted as export catalysts, in some cases fuelling a domestic export industry where there were no domestic exports at all.

The cases documented by Rhee and Belot suggest that any concept of 'Spillovers' throughout foreign investment should also include the transmission of knowledge about export markets and contacts, quality control and management know - how.

Giwa (1995), in looking at challenges and opportunities for direct investment in Nigeria, believes that there is urgent need to rectify the structural defects in the Nigeria socio-political and economic framework which, in his opinion, are strong enough to discourage foreign investors.

In arguing for the need for direct foreign investment Chief Giwa further posits that the Nigerian economy has been going through a turbulent period since the early 80' s when the fortunes of crude oil started to suffer tremendous setbacks. The introduction of SAP has also called for more belt tightening. Reduced foreign exchange earnings consequent upon the foregoing has adversely affected local industries significantly forcing many to reduce capacity utilization or close down completely since they rely on imported raw materials. Other sectors of the economy, he argues, have not fared better. The risk of overdependence on crude oil as the main stay of the economy is now very glaring. Unemployment he argues has been on the increase while galloping inflation has impeded real growth.

Odozi (1995) in his overview of foreign investment in Nigeria - 1960 to date, posits that foreign investment appears to be the most crucial component of capital inflows Nigeria should seek to attract in the light of her current economic circumstances. This view can be supported by the need to initiate a strong economic recovery after a prolonged period of recession and macroeconomic instability. There is urgent need, he argues, to stimulate the growth of domestic output, minimize the rate of inflation and unemployment, while the exchange rate which is almost stable in the autonomous foreign exchange market needs to appreciate substantially to permit meaningful private investment to take place. As renewed efforts to restore macroeconomic stability are now being made, improved inflow of foreign investment in the medium to long-term will facilitate the achievement of these goals.

2.5 Investment Theory and Economic Growth.

Keynes (1936) was the first to call attention to the existence of an independent investment decision in the economy. He observed that investment depends on the prospective marginal efficiency of capital relative to some interest rate that is reflective of the opportunity cost of the invested funds. He pointed out that private investment was intrinsically volatile since any rational assessment of the return on investment was bound to be uncertain. The "animal spirits" of private investors would be the main driving force

in investment decisions.

After Keynes, the evolution of investment theory was linked to simple growth models. These models gave rise to the accelerator theory, popular in the 1950s and early 1960s and widely used even today in practical growth exercices. The accelerator theory makes investment a linear proportion of changes in output. Its extreme simplicity explains its popularity. Given an incremental capital/output ratio (ICOR), it is easy to compute the investment requirements associated with a given target for output growth. In this view, expectations, profitability, and capital costs play no role. (See Luis and Adres 1993).

The restrictive assumptions behind the accelerator theory led jorgenson (1967) and Hall and Jorgenson (1971) to formulate the neoclassical approach. Here, the desired (or optimal) capital stock depends on the level of output and the user cost of capital (which in turn depends on the price of capital goods, the real interest rate, and the depreciation rate). Lags in decision making and delivery create a gap between current and desired stocks, giving rise to an investment equation, that is, an equation for the change in the capital stock.

The foundations of this approach have been criticised on the grounds that: the assumptions of perfect competition and exogenously given output are inconsistent; the assumption of static expectations about future prices, output, and interest rates is inappropriate, since investment is essentially forward-looking; and the lags in delivery are introduced ad hoc.

An alternative view, associated with Tobin (1969) is what matters is the relation between the increase in the value of the firm as a result of the installation of an additional unit of capital and its replacement cost. When the increase in the firm's market value exceeds (or is less than) the replacement cost, firms will want to increase (or decrease) their capital stock. This ratio, known in the literature as marginal Q, may differ from unity because of delivery lags and adjustment or installation costs. However, it is not easy to measure marginal Q, and the ratio of the market value of the entire existing capital stock to its replacement cost (the average Q ratio) is used instead.

Abel (1980) Hayashi (1982) and Precious (1985) point to the problems in using Q. If firms enjoy economies of scale or market power, or if they cannot sell all they want, marginal and average Q will systematically differ. Moreover, the assumption of increasing marginal installation costs

underlying the Q theory is dubious. The cost of additions to an individual firm's capital stock is likely to be proportional -- or even less than proprtional -- to the volume of investment because of the lumpy nature of many investment projects. More important, disinvestment, if feasible, is more costly than positive investment: capital goods often are firm-specific and have a low resale value.

Also, in the Keynesian tradition, the disequilibrium approach (Malinvaud 1980) Sneesens (1987) views investment as a function of both profitability and demand for output. In Malinvaud (1982) investment decisions have two stages: First, the decision to expand the level of productive capacity; and second, the decision about the capital intensity of the additional capacity. The former decision depends on the expected degree of capacity utilization in the economy, which provides an indicator of demand conditions. The latter decision depends on relative prices such as the cost of capital and labour. The distinction between the decisions is meaningful because factor proprtions are assumed to be variable before the investment but fixed after it. The investment decision, in turn, takes place in a setting in which firms may be facing current and expected constraints on future sales, an important departure from the continous market-clearing assumed by both neoclassical (Jorgenson's) and Tobin's Q models. Therefore, investment depends both on

profitability and on the prevailing sales constraints, which determine the rate of capacity utilization.

Disequilibrium models have often been criticized on the grounds that their assumptions regarding expectations are too simple and that they do not explain why prices are rigid. Market disequlibrium and rational expectations are not, however, necessarily inconsistent hypotheses. Neary and Stiglitz (1983) have developed rational expectations models in which the markets for goods and labour do not clear, in context of forward-looking agents that anticipate future sales constraints and wage and price rigidities. This point is particularly relevant since investors are concerned whether investment decisions made today will be justified by events in the future. From the policy viewpoint, important problems of macroeconomic adjustment, such as a persistent decline in output, are associated with (transitory) disequilibrium in the goods and labour markets. In such conditions, investment behaviour may involve a combination of expectations and market disequilibrium.

The macroeconomic models of coordination failure, which emphasize the inability of individual agents to coordinate successfully their investment decisions in a decentralized economic system, provide another view. Although there are many potential sources of such failures, the most common one is the

existence of monopolistic competition with increasing returns to scale. In this context, the returns on investment depend on the overall level of economic activity, which in turn is positively affected by the volume of aggregate investment. Since each firm is likely to view its own contribution to aggregate investment as negligible, the social and private returns on investment diverge, with the former exceeding the latter. Under certain conditions the economy may get stuck in an "insufficient investment" equilibrium, in which individual firms invest too little - lowering aggregate investment - precisely because each firm expects aggregate investment to be low.

CHAPTER THREE

PATTERN AND DIRECTION OF CHANGES OF PRIVATE FOREIGN INVESTMENT AND ECONOMIC GROWTH IN NIGERIA 1980-1996

3.0 Introduction

This chapter looks at the pattern and direction of changes of private foreign investment in Nigeria, analyse the various policies and strategies adopted by the government over this period . Not only this, it also specifically look at the pattern and direction of changes in the manufacturing sector and its impact on the growth process of the economy. In doing this, we started with highlighting the background information on Nigeria as a nation and then proceeded to the analysis of the pattern and direction of changes in the foreign investment sector in relation to economic growth.

3.1 Background Information on Nigeria:

The Federal Republic of Nigeria, situated along the west coast of Africa, lies between latitudes 4° and 14° north of the Equator and longitudes 3° and 14° east of the Greenwhich Meridian. It shares borders with Benin Republic in the west, Cameroun in the east, Niger and Chad in the north, and Gulf of Guinea in the South. Nigeria has a population of about 88.5 million people (1991 figure) with an estimated area of 924,000 square kilometres. The longest distance is 1,126

kilometres from East to West and 1,046 kilometres from North to South.

The land rises from the southern coast to hilly ranges in the north-central, north western and eastern parts of the country, there are two major relief forms - the high plateaux and the lowlands. there are four main plateaux and mountain groups ranging between 300 metres and 1,800 metres above sea level. The lowlands include the sokoto plains, Niger-Benue through Chad Basin, Borno plain, Cross-river plains, Coastland in the West, Imo and Anambra flood plains, coastal margins and the swamps. The main drainage systems are formed by the Niger-Benue rivers, Lake Chad and several other rivers (including Benin, Cross, Ogun, Oshun) which flow north-south to the coast.

The climate is tropical but differs sharply between the north (bordering the Sahara) and the south (bordering the Atlantic Ocean). There are two seasons-- the dry and the rainy seasons. During the dry seasons (Novèmber-April), the dry dust-laden north-easterly winds blow across the country. The moisture-laden south- westerly winds blow from the coast during the rainy season (May-October), bringing the rains. Rainfall decreases from about 1,500mm in the south to about 500mm in the north. The temperatures range between 22°C and 34°C. Temperatures as low as 8 °C have, however, been recorded

during the harmattan period (December/January).

There are four vegetation belts: the mangrove swamp on the coast, the rain forest, the woodland savannah, and the Guinea and Sudan savannahs in the extreme north. The southern forest zone reaches as far as 150km northwards in places and gives way to savannah woodland and grassland reaching up to the sahara region in the far north.

In the last two decades, the country has shifted emphasis from being a major agricultural producer to a single product economy of oil dependency. The oil boom transformed Nigeria from an agricultural economy to an oil producer with largely a mono-export culture. By 1980, oil accounted for 22 percent of GDP , 81 percent of government revenue and 96 percent of export earnings (FGN. 1993). In the 1970s, Nigeria like many other developing countries, adopted an import substitution strategy which promoted import dependent, inefficient and non-competitive industries within a protected market (FGN. 1993). This resulted in a decline in agricultural productivity and promoted the massive importation of food items. Furthermore, the industrial developmental efforts were fraught with dependence on external technology, scientists and technologists. Thus plants, machinery, and raw materials were imported while the maintenance of most of these machines was also being done principally by external personnel. In

addition, there was a lopsided distribution of industries in favour of the urban areas, thereby exacerbating the problems of inadequate and uneven development of the rural areas and a depletion of the rural agricultural labour force (FGN, 1993).

However, in the last few years, deliberate and vigorous efforts have been made to reverse this undesirable trend through the introduction and implementation of policies and programmes geared towards self-reliance. Following the slump in the global petroleum market and the resultant drastic reduction of the nation's foreign exchange earnings, both of which have adversely affected the country's economy, the need to re-orientate the country's economic activities was recognized and the government's response to this challenge was the introduction of a Structural Adjustment Programme (SAP). SAP, which was introduced in September, 1986 was aimed at promoting long-term growth and development of the economy. In line with the provisions of Structural Adjustment Programme (SAP), current government policy puts great emphasis on privatisation and commercialisation of public enterprises aimed at reducing the contribution of non-statutory subvention (to economic and quasi-economic parastatals) to budgetary deficits. It further aims at liberalizing access to foreign exchange for private investors and the opening up to foreign investors areas previously exclusively reserved for Nigerians.

Early in 1989, Government introduced an Industrial Policy document with a view to charting a new course for the industrial sector in the 1990s. The document put together various measures that had been adopted under SAP and which have impact on industrial development. The document also articulates the current malaise in industry. The overall objective of the country's Industrial Policy is to achieve an accelerated pace of industrial development so that the industrial sector would become the prime mover of the economy. The elements of this objective include : the creation of greater employment opportunities, increased export of manufactured goods, decentralisation of industries, improving the technological skills and capability available in the country, increased local content of industrial output, attracting foreign capital, and increased private participation in the manufacturing sector. Priority is being given to industries using local raw materials, those producing intermediate goods, export-oriented industries utilizing domestic raw material inputs and small-scale industries. The long- term development of some of the key industrial subsectors such as agro-based, chemicals, petro-chemical, building materials, engineering, metallurgical industries will, however, require considerable domestic as well as foreign investment.

3.2 Historical perspective of policies and strategies towards foreign investment in Nigeria.

In Nigeria, just like any other developing countries policies and strategies towards foreign investments are usuallly shaped by two principal objectives, namely, the desire for economic independence (economic nationalism) and the demand for economic development. In general the greater the emphasis on economic nationalism, the less generous the government would be in its system of incentives designed to promote private foreign capital, while emphasis on accelerated economic development would dictate a wider opening of the door for foreign investors to come in.

3.2.1 Policies and Strategies during the colonial era

During the colonial period, a laisse-faire policies towards the operation of multinational enterprises in the country was adopted. Although these enterprises were to operate "Within the framework of government regulations", in actual practice government regulation of business activities were virtually absent. Economic power was concentrated in large expatriate enterprises, the biggest of which was the United African Company Limited (U.A.C), itself a subsidiary of the giant Unilever Company with headquarters in the United Kingdom. By late 1930s, the U.A.C. controlled over 40% of Nigeria's import-export trade; and by 1949, it controlled 34% of merchandise imports into Nigeria and purchased on behalf of

the marketing boards, 43% of all Nigeria non_mineral exports. Expatriate dominance was also evident in the fields of manufacturing and mining, banking and shipping (Enuenwosu, 1980).

3.2.2 Legislative Incentives to Foreign Investors Before Independence

A critical look at the legislative incentives to foreign investors before independence shows that special incentives embodied in Five Acts provided a significant percentage of policies towards foreign investment on the eve of Nigeria's political independence. The Industrial Development (Income tax relief) Act, 1958, TheIndustrail Development (Import duties relief) Act, 1957. The Customs duties (Dumped and subsidized goods) Act, 1958, The Customs (Drawbacks) regulation, 1959, and the Income tax (Amendment) Act, 1959; together accorded foreign investors wide range of incentives which included protracted tax holidays, accelerated depreciation of capital, some market protection, and the creation of a more competitive business environment.

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3.2.3 The Industrial Development (Income tax relief) Act, 1958

Under this Act a company could operate an industrial enterprise for a tax-free period of five years with possible extension to a maximum period of ten years, provided such a

company fulfilled certain stipulated conditions. To qualify for this benefit the industry must first acquire a "pioneer status". Only a public limited liability company registered in Nigeria is eligible to apply for a pioneer certificate from the federal ministry of Industry. The grant of a pioneer certificate entitles the company to certain reliefs from income tax depending, among other things, on the level of initial and subsequent capital investments in fixed assets in its formative years.

3.2.4 The Industrial Development (Import duties relief) Act, 1957

This Act provided for the refund of import duties on materials brought into Nigeria for use in the manufacture or processing of goods or in the provision of services under given conditions. To qualify for this benefit, it must be demonstrated by the producer that without the rebate it would be impossible to provide the goods or the services at prices which are competitive with the imported counterpart; or that a comparable imported article bears a lower proportion of import duty than the materials imported to manufacture the same article locally in Nigeria. Such duty exemptions may be granted for up to ten years.

3.2.5 The Customs Duties Act of 1958 and the Customs regulations of 1959.

These Acts were designed to enable the federal government to accord some market protection and competitive advantages to the local industrialists. Under the former, the federal government is rested with the power to impose a special duty on any goods which are being dumped in Nigeria or are subsidized by any government or authority outside Nigeria if the government is satisfied that such goods would threaten or cause material injury to a potential or established industry in Nigeria and that the imposition of a special duty will not conflict with her obligations under the General Agreement on Trade and Tariff (GATT).

3.2.6 The Customs (Drawback regulations) 1959.

This enabled importers to claim repayment of import duty if goods are exported in the same state as that in which they were imported and if materials are imported for use in the manufacture of goods and then exported.

3.2.7 The Income tax (Amendment) Act of 1958.

Under this Act, public and private enterprises, whether or not engaged in pioneer industries are allowed to undertake a much quicker write-down of their capital assets in their early years of trading. This enabled them to amortize their capital assets and build up liquid reserves during their

formative years. The Act provided for a special initial write-off of 40% for machinery in addition to a normal permissible annual depreciation of 5 to 15%. Thus a company could write-off 45-55 % of the investment in machinery during its first taxable year in deriving its taxable income. An initial capital write-off of 20% is allowed for industrial buildings while that for developmental costs on mines and plantations is 25% . There are also additional regular and varying annual rates to be claimed for these type of investments.

The pioneer company could defer depreciation allowances until the end of the tax holiday. Where taxable income is less than the capital allowances claimed, the balance could be carried forward indefinitely to be set against future taxable profits.

3.2.8 Independence Period

By the time the country attained political independence in 1960, a system of incentives described by many observers as very generous had been provided to foster rapid industrialisation of the economy through liberal foreign capital participation. Freedom by expatriate investors to repatriate at will, profits, dividend and capital owned by them was assured. Assurances were also given that no government in Nigeria was interested in wholesale of industries and that where nationalization of any industry

became necessary in the future, a fair compensation, determined by independent arbitration would be paid.In this connection the federal government became a signatory to the convention on the settlement of investment disputes between states and nationals of other states under the sponsorship of the International Bank for reconstruction and development (I.B.R.D) This convention enables disputes between foreign investors and host states to be submitted to international conciliation and arbitration.

Other attractions offered to foreign investors included, the availability of government assistance in obtaining land and factory site and the provision of industrial estates and public utilities or basic infrastructural facilities. The principle of granting tariff protection to local industries was accepted by the government where it was found economically necessary and justifiable. As a major strategy, the government of the federation solicited partnership wherever possible between foreign and indigenous entrepreneurs.

3.2.9 Post independence policies

Consistent with the colonial government policies towards foreign investment, the government of independent Nigeria persuaded the foreign investors that their property would be save in Nigeria and above all that they would be free to

repatriate their profits and capital. The first National Development Plan (1962-1968) called for investment in productive assets and facilities amounting to N2.2 billion. Of this, N652 million was to be provided by foreign governments and international agencies in loans and grants while private investors were expected to provide N400 million. With regard to policy, the plan called for economic independence as the ultimate goal, but accepts assistance in man and materials to supplement their own resources.It was asserted that until the ultimate goal of economic self-reliance was attained, Nigeria continues to need and indeed welcome foreign capital and skill.

The two objectives of economic self-reliance and economic development remained the interacting forces that shaped the policies and strategies towards foreign investment during this period. The period not only witnessed the consolidation of existing apprcaches but also saw the experiment assuming new and bold dimensions. The following excerpts from the second National Development Plan reveal the underlying rationale for the legislative actions taken during this period.

"The uncompromising objectives of a rising economic prosperity in Nigeria is the economic independence of the nation and the defeat of neo-colonialist forces in Africa..... Nigeria will.... quicken its pace of

development through the use of her own resources instead of relying unduly on external aid. This is the only way for an aspiring nation like Nigeria to develop at a rapid rate and in the right direction"

3.2.10 The Nigeria Enterprise Promotion Decree, 1972.

One of the most far reaching developments in the area of enterprises law was the promulgation and enforcement of the Nigerian Enterprise Promotion Decree(NEPD) in 1972 which classified enterprises into three categories. The first category contained enterprise which required simple technological know how. These were reserved entirely for Nigerians. Enterprises in the second and third categories were to be joint-ventures between Nigerians and foreign partners with varying ceilings on majority shareholding with minority foreign participation. The highly technological group of enterprises listed in Schedule Three could be controlled by foreign investors if they had majority shareholdings. Exclusive or 100 percent ownership of any enterprises by a foreign investor was precluded in the first version of the Decree. The amended version of the Decree published in 1974 also forbids wholly-owned enterprises by foreigners. In the subsequent amended version of the Decree introduced in 1988, the only scheduled enterprises were those reserved for Nigerians. Foreign investors were free to wholly-own any unscheduled enterprise provided it was not in banking,

insurance, petroleum prospecting and mining businesses, sectors in which the Federal Government had equity holdings.

The most controversial aspect of the NEPD of 1972 appeared to be its retroactive effect which compelled existing enterprises that did not meet the provisions of the Decree to sell their excess shares to Nigerians at the initial period of the enforcement of the Decree. That aspect of the Decree was regarded by many foreign investors as a form of nationalization. The enforcement of the Decree, therefore, resulted in the liquidation of some companies owned by important multinationals in the banking and industrial sectors which were averse to ownership dilution considered capable of creating problems of control for the enterprises.

The Inflow of new foreign investment since the enforcement of the 1972 Decree has dwindled and has not recovered to the level in the sixties (Odozi , 1995). In contrast, investment appears to be flowing to countries which have not introduced similar regulatory arrangements. The experience has tended to confirm the thesis that the flow of foreign investments is responsive to a country's structure of investment incentives (Odozi , 1995). In retrospect, it has been difficult to find acceptable rationale for the introduction of the 1972 Decree except on grounds of national sentiments. It could not have been justifiable on grounds of

potential for increased output and employment or technological know_how by Nigerians nor could its continued retention be supported by the apparent prolonged decline in Nigeria's educational standards (Odozi , 1995).

3.2.11 **Policies and strategies in the early eighties.**

In the early eighties, in its efforts to encourage and direct the inflow of foreign investments, the Nigerian government intensified a variety of measures, the purpose for this can be classified into three categories namely, Tax and Tariff concession, Non-tax financial incentives and other promotional measures.

a. **Tax Concessions**

The tax relief for Research and Development (R & D) which is intended to promote the development of locally sourced inputs and create linkages in the production process is one of the tax concessions. Under this incentives, a company which undertake R and D activities in a year is entitled to a tax-deductible allowance equal to 120 percent of the amount expended if the research is on raw materials. In addition, the fruits of such research could be patented and protected in accordance with the internationally accepted industrial property rights.

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The pioneer status incentives is another tax concession which is specifically aimed at encouraging the establishment of some industries which government considers beneficial to Nigeria. To benefit from this incentive, the relevant company (or the product) has to be declared a pioneer industry (or product) on application to the government. Companies granted "pioneer status" are entitled to tax holidays on corporate income for three years in the first instance, and, on extension of two years thereafter. The incentive initially applied to government owned enterprises but it is now being reviewed with a view to extending the concession to private foreign investors as well as indigenous investors.

Clearly tax holidays represent a substantial protection for the capital invested in industries accorded pioneer status. The accrual of the amount that should remain within the company is expected to be adequate to compensate the investors for any risks associated with the decision to invest in a pioneer industry.

Corporate income tax incentive is another tax concession. The incentives under corporate income tax provisions are usually specified during annual fiscal budget. For example, in 1988 budget, the tax policy of the government was substantially modified with a view to stimulating investment and growth in the economy. While retaining the reduction by 5

percent points, the companies income tax rate (to 40 percent) introduced in 1987, the government took action to reduce the taxes payable on dividends, interest, royalties and rents. It also introduced small business tax reliefs under which a lower tax rate of 20 percent would be paid by small establishments in the manufacturing, agricultural and solid mineral processing sectors.

Moreover, in furtherance of the government efforts to assist industries in certain preferred sectors, an additional 5 percent initial capital allowance was to be granted in respect of new expenditure on plant and machinery used in manufacturing construction and agricultural production including qualified ranching and plantation expenditures.

The customs (Duty Drawback) concession operates in the sense that import duties paid on raw materials used for producing export goods may be refunded under the duty draw back agreement. The repayment is in full if all the imported raw materials are used in the production of goods which are exported. If the raw materials are used for producing composite goods some of which are exported, appropriate computation is made to arrive at the amount to be refunded. This incentive offers a great deal of attraction especially to multinational companies interested in establishing production bases in Nigeria to produce raw materials considered vital for

their global activities.

b. **Non Tax Financial Incentives**

For companies whose shares are quoted on the Nigerian Stock Exchange government has permitted the issuance of non-voting shares to enable them attract capital from foreign investors. This innovation has been formulated by a recent decree which authorises companies quoted on the Nigerian Stock Exchange to issue non-voting shares for sale on the exchange. The shares may be subscribed to by any person irrespective of nationality and place of residence. The decree was introduced to provide investment opportunities to foreign partners and individuals. Payment for the shares is to be made in convertible foreign currency and the shares shall be qualified for both dividend and capital repatriation.

3.2.12 **Other Investment Promotional Measures.**

Apart from the financial incentives measures discussed above, government is pursuing as a matter of priority, the maintenance and expansion of existing infrastructural facilities such as roads, railways, sea and airports, water and telecommunication networks. Improved communication links consisting of the provision of thousands of new telephone lines and effective reactivation of postal services have been enhanced through the reorganisation of the official institution formerly in charge of post and telegraph services

and additional investment in the area of infrastructures. Government has also executed a number of major projects in the area of power, energy and gas designed to enhance investment in industry.

In order to promote both indigenous and foreign investments in some industrial sub-sectors, the government has vigorously pursued the establishment of some key and basic industrial projects. The rationale for government involvement in the setting up of these projects is that their establishment requires heavy expenditure outlay which are unaffordable to private investors. These projects include two iron and steel plants, steel rolling mills, petro-chemical projects, fertilizer plants and paper mills etc.

In order to reduce to the barest minimum bureaucratic hinderance and cumbersome regulatory environment which militated against foreign investment in the country, the Federal government established by Decree No.36 of 1988, the Industrial Development Coordination Committee (IDCC) to grant all pre-investment approvals which hitherto were fragmented among various governments. This committee has been transformed to a dynamic unit called Nigerian Investment Promotion Commission (NIPC). The granting of such approvals from various departments in the past led to delays and frustration on the part of investors.

Also, as a further measure to encourage foreign investment in the Nigerian economy, Government introduced the Nigerian Enterprises Promotion Act of 1989 which reviewed the ownership structure of Nigerian enterprises which made it possible for foreigners to own virtually 100% equity in any business in Nigeria. Although there are 40 enterprises reserved for Nigerians provided that their equity contribution in such a business is not less than N20 million

3.3 Characteristic Features of Foreign Investment in Nigeria

Nigeria has such attractive features as large domestic market, substantial natural resources, a considerable amount of entrepreneurial talent, and a geographical location capable of taking advantage of regional and continental markets. In spite of these numerous advantages the inflow of foreign in vestment into the country has been very minimal. More disturbing are the indications that existing foreign investments in Nigeria tend to utilize domestic resources in competition with domestic investors (FGN, 1993).

There are varied sources of foreign investment into a country. These include among others, direct inflow of foreign investment, the use of unremitted profits by existing foreign investors, and suppliers credit. Of these, direct inflow of foreign investment and use of unremitted profits are most critical in Nigeria.

Foreign direct investment traditionally attracts skilled labour, entrepreneurship, technological know-how and direct flow of foreign resources, including in particular, foreign exchange. When these factors flow into the economy they augment the existing domestic resource base. It is for this reason that Nigeria has put in place a package of incentives designed to attract foreign direct investment.

However, the dominance of unremitted profits as a source of foreign investment in Nigeria is very striking; this leads to the conclusion that Nigeria has not been able to attract significant inflow of new foreign capital (FGN, 1993). Unremitted profits of existing foreign investors have been the major source of additional foreign investment in Nigeria while share capital subscriptions constitute only a small proportion of net foreign capital inflows. This indicates that the pattern of investment in Nigeria is such that most 'foreign investments' in the country are financed out of retained earnings (unremitted profits) rather than the importation of new money (FGN,1993).

Given that the existing foreign investors produce mainly for the domestic market, they correspondingly generate little by way of foreign exchange. Their retained profits which are ploughed back often require purchase of foreign exchange, thus putting pressure on available foreign exchange in the domestic

economy. The repatriation of their profits also requires conversion of foreign exchange. Therefore, the financing of 'foreign investment' using retained profits is not, in practical terms, different from implications of the effect of domestic investment on foreign exchange. Essentially therefore, 'foreign investment' using retained earnings put the same pressure on the exchange rate as domestic investment. Both sources of investment require foreign exchange generated by the Nigerian economy. In a situation in which additional foreign investment comes into the country, there is an offsetting tendency in favour of the Nigerian economy (FGN. 1993). Because this offsetting tendency through direct inflow is lacking, foreign investors, in contrast to their traditional roles, have become net users of foreign exchange in Nigeria.

Also, where foreign investors rely on domestic credit for their capital requirements, further pressure is put on the cost of domestic borrowing. The relatively weaker domestic investors is, in the process "crowded out" of the domestic credit market. In a situation where foreign investment is financed through domestic credit, the loss of investment and the loss suffered by the credit lending institution are both borne by the domestic economy. That is to say, in the event of a collapse of business, the balance of the burden of failure of the investment will be left to be borne by the system that

provides the credit--the Nigerian economy. This form of foreign investment has all of the characteristics of domestic investment and so fails to perform the traditional role of directly augmenting the capital base of the host economy while enjoying the full benefits due to foreign investment.

Moreover, the financing of' foreign investment' in Nigeria out of retained earnings (unremitted profits) implies that low returns on investments will obviously decrease the incentive for further foreign investment and the degree of future investments, since a large proportion of foreign investments are financed from profits made in earlier years. It is in this regard that the depreciation of the country's currency may further dampen any desire to invest in Nigeria as the continued depreciation of the Naira would drastically reduce the profits in real terms.

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Nigeria possesses several characteristics which are favourable to the inflow of foreign investments. Its large and virile population makes it a vast market for a wide range of industrial products. It is richly endowed with many natural resources including minerals and economically exploitable vegetation. A significant proportion of her requirements of final consumer goods and intermediate inputs is currently being imported, leaving a wide gap for import substitution in satisfying the domestic market. In spite of its high potential

for the attraction of foreign investments, Nigeria has not benefitted significantly from this vital resources during the last two decades because of some developments in her investment policies which might have been interpreted as not being friendly (Odozi, 1995). For instance, contrary to the open door policies adopted towards foreign investments in the East Asian industrialising countries since the sixties, Nigeria, in the seventies and eighties, instituted a regulatory framework and introduced institutional arrangements which had the unintended effect of retarding the inflow of foreign investments. In addition, there were other factors such as the debilitating external debt burden as well as some socio-economic and political developments which militated against the inflow of foreign private investments (Odozi, 1995).

3.4 Origin of Foreign Direct Investment (FDI) in Nigeria

Available statistics in Table 1 point to the fact that FDI flows to Nigeria originate mainly from the highly industrialised countries of the world. Most foreign investments in Nigeria originated from the United States of America (USA), the United Kingdom (UK) and from the other member countries of the European Community (EC).

3.4.1 Sectoral Distribution of Foreign Investment in Nigeria

Emerging from the changing global context of FDI is the fact that there is gradual movement of FDI away from the export-oriented production of simple consumer goods and expanding into trade and business services as well as technologically more sophisticated production lines such as industrial electronics, machine tools and automobiles. Until the late 1980s, foreign investors in Nigeria have tended to concentrate investment on more lucrative sectors such as Mining and Quarrying, Trading and Business Services , Manufacturing and processing to the neglect of development sectors such as agriculture, transportation and communications.

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In recent times, however, investment permits indicate that foreign investors' interests in Agriculture, Forestry and Fishing as well as in Manufacturing and Processing sectors of the Nigerian economy are on the decline; while increasing shares of FDI are attracted to the Building and Construction and Trading and Business Services sectors.

3.4.2 Flow of Foreign Private Capital to Nigeria (1980-1996)

In a report containing the analysis of the flow of foreign private investment through wholly foreign or jointly Nigerian/foreign companies incorporated in Nigeria in 1985, the Central Bank of Nigeria survey indicates in its Economic

and financial Review of september 1987 that of 1,294 companies contacted for survey, 840 or 64.9 percent response was achieved. It was discovered that for three consecutive years, 1983-1985, Net foreign private investment into the country was declining in spite of the generous incentives to investors.

However, at a total of N1,423.5 million, gross private capital inflow from foreign companies operating in the Nigerian economy in 1985 shows an increase of 2.8 percent above its 1984 level (see table 1 cont'd.). Simultaneously, gross capital outflow through these companies witnessed an unprecedented increase of 28.6 percent from its 1984 level of N850.5 million to N1,093.8 million in 1985. The resultant net foreign capital inflow therefore stood at N329.7 million in 1985 showing a decrease of 38.4 percent from the 1984 level. Thus, net foreign capital flow into the Nigerian economy in 1985 was a continuation of the declining trend started in 1983.

The observed declining trend in the net capital inflow was due to higher rates of increase in total outflow which could not be counter-balanced by the increase in the inflow of foreign capital. With the exception of companies from the United Kingdom, all the companies from the other three regions recorded net outflows. Companies from United States, Western Europe (excluding UK) and other unspecified countries incurred net outflow to the tune of 94.7, 58.0 and N2.4 million or 24.3%, 18.3% and 2.9% respectively.

TABLE 1

Flow of Foreign Private Capital by Country Or Region of Origin (1980 - 1996)
(Nm)

	UNITED KINGDOM			UNITED STATES OF AMERICA			WESTERN EUROPE		
			Netflow			Netflow			Netflow
Year	Inflow 1	Outflow 2	(1-2) 3	Inflow 4	Outflow 5	(4-5) 6	Inflow 7	Outflow 8	(7-8) 9
1980	365.0	46.8	318.2	159.1	158.7	0.4	225.9	94.7	131.2
1981	128.0	120.6	7.4	103.9	231.5	-127.6	325.3	82.5	242.8
1982	776.2	211.6	564.6	854.5	121.5	733.0	401.9	194.3	207.6
1983	1058.3	443.3	615.0	150.7	351.3	-200.6	310.6	194.0	116.6
1984	714.0	213.4	500.6	321.1	327.2	-6.1	229.5	254.6	-25.1
1985	635.7	150.9	484.8	390.1	484.8	-94.7	316.8	374.8	-58.0
1986	1769.5	289.8	1479.7	1359.2	847.9	511.3	574.7	346.9	227.8
1987	2304.7	1870.5	434.2	1762.8	1945.8	-183.0	776.9	552.4	224.5
1988	1276.7	2059.9	-783.2	3272.6	1736.3	1536.3	1497.3	1037.9	459.4
1989	1979.6	450.0	1529.6	1646.4	3738.4	-2092.0	671.4	743.6	-72.2
1990	1102.5	529.0	573.5	6003.1	6436.6	-433.5	2816.8	3747.7	-930.9
1991	777.8	358.3	419.5	1166.6	2202.5	-1035.9	1958.7	628.5	1330.2
1992	638.6	78.1	560.5	9678.2	2841.4	6836.8	1111.8	364.4	747.4
1993	4199.3	566.0	3633.5	10830.5	4788.8	6041.7	26742.8	4184.4	22558.3
1994	1272.5	135.8	1136.7	2542.0	1154.4	1387.6	1287.0	1554.4	-267.4
1995	5209.0	1993.0	3216.1	6989.0	1945.4	5043.5	41541.3	3,256.3	38,285
1996	1841.0	646.2	1194.8	553.2	841.4	-288.2	2301.1	1051.7	1249.4

Source: CBN Economic and Financial Review. Various issues (1980 - 1997).

TABLE 1 CONT'D

Flow Of Foreign Private Capital by Country Or Region of Origin (1980 - 1996)
(Nm)

	OTHERS			TOTAL		
			Netflow			Netflow
Year	Inflow 10	Outflow 11	(10-11) 12	Inflow 13	Outflow 14	(13-14) 15
1980	36.4	19.2	17.2	786.4	319.4	467.0
1981	27.7	12.5	15.2	584.9	447.1	137.8
1982	160.8	41.1	119.7	2193.4	568.5	1624.9
1983	154.0	128.3	25.7	1673.6	1116.9	556.7
1984	120.7	55.3	65.4	1385.3	850.5	534.8
1985	80.9	83.3	-2.4	1423.5	1093.8	329.7
1986	320.6	39.8	280.8	4024.0	1524.4	2499.6
1987	266.4	62.1	204.3	5110.8	4430.8	680.0
1988	190.1	57.0	133.1	6236.7	4891.1	1345.6
1989	395.3	200.1	195.2	4692.7	5132.1	-439.4
1990	527.8	201.2	326.6	10450.2	10914.5	-464.3
1991	1701.1	612.9	1094.2	5610.2	3802.2	1808.0
1992	302.0	177.6	25.6	11730.7	3461.5	8269.2
1993	852.4	91.3	761.1	42624.9	9630.5	32994.4
1994	272.4	1073.7	1650.3	7825.5	3918.3	3907.2
1995	2,260.0	127.5	2,132.6	55,999.3	7,322.3	48,677.0
1996	977.6	402.6	575.0	5672.9	2941.9	2731.0

Source: CBN Economic and Financial Review. Various issues (1980 -1997).

As in 1984, both inflow and outflow of foreign capital from companies of United Kingdom origin recorded declines of 11.0 and 29.3 percent in 1985 with consequent net inflow amounting to N484.8 million, indicating a decline of 3.2 percent from its 1984 level. In the case of companies originating from the United States, Western Europe and other unspecified countries, activities of the companies resulted in net capital outflows. During the preceding year, net outflows were equally recorded by companies of United States and Western Europe (excluding UK) to the tune of 6.1 and N25.1 million respectively, while net inflow of N65.4 million was realised from companies from other unspecified countries.

The Central Bank of Nigeria survey of 1991 (Central Bank *Economic and Financial Review September,1993 Vol.31 No.3*) also indicates that in 1991, the netflow of foreign private investment recorded a remarkable increase, reversing the series of net capital outflows during the last two consecutive years. It was believed that this dramatic turnaround was attributable to the renewed confidence of foreign investors in the economy as the incentives accruing from the deregulation of the economy and gradual improvement in the political climate during the review period were becoming apparent. The increase in foreign investment reflected flows from unremitted profits, changes in foreign share capital, and trade and suppliers credit. Foreign investment from these sources

exceeded the capital outflows due to the liabilities of their head offices and other foreign liabilities to the extent that a substantial surplus was recorded during the review period. The survey also showed that, on a sectoral basis, the bulk of the investment went to manufacturing and processing, building and construction sub-sectors. However, huge outpayment were made by companies of U.S.A origin in settlement of indebtedness due to suppliers, thereby reducing their stocks to their parent companies affiliates.

The survey covered 756 establishments that are either fully foreign national-owned or are in partnership with Nigerians/Nigerian agencies or enterprises doing business in Nigeria. Questionnaires were retrieved from 431 companies, representing a response rate of 57.0 percent.

The net outflow experienced in foreign investment in the previous two years was reversed in 1991 to a net inflow of N1,808.0 million. Geographical regions that contributed to the remarkable increase in private foreign capital flows were largely Western Europe (excluding the U.K) and other unspecified countries. The net inflows from the regions were N1,330.2 and N1,094.2 million, respectively. Companies of the United Kingdom origin posted a modest net inflow of N419.5 million during the reviewed period. The overall capital flow from the U.S.A. however, indicated a net outflow of N1,035.9

million. This trend showed persistent divestment of American interests from the Nigerian economy in three consecutive years.

The results of the 1994 foreign private investment survey (Central Bank Economic and Financial Review Vol. 34, No.3 September, 1996) undertaken annually shows that the netflow of foreign private investment into the Nigerian economy in 1991 reduced drastically to N3,907.2 million from N32,994.4 million recorded in the preceding year. The sharp decline was attributable to the unstable business environment which resulted from political agitation and labour unrest during the review period. Contributions of all the investment flow components fell, especially changes in foreign share capital and trade and suppliers credit facilities which plummeted to N429.5 million and N214.8 million from N5,011.4 and N17,803.1 million recorded in the preceding year respectively. While investments of all the other regions declined, investment flows from companies of Asian origin rose from N520.0 million in 1993 to N1,415.4 million, representing 36.2 percent of the total net inflow. The survey revealed that the cumulative level of foreign investment in the country was N70,714.6 million. The mining and quarrying sector accounted for the largest share of foreign investment as in the previous year. However, its proportion declined from 41.5 percent in 1993 to 37.7 percent in 1994. There were no new investments in the

mining and quarrying and agriculture, forestry and fisheries sectors in 1994 as their aggregate investments remained stagnant. The review further showed that net inflows in both current and long-term liabilities fell drastically from their levels in the previous year. This development was attributed largely to the activities of companies of Western Europe origin (excluding the U.K) in the mining and quarrying sector, which recorded net outflow of N789.9 million through other liabilities component of investment flow in 1994, as against substantial net inflow of N21,101.3 million registered in the previous year.

The exercise covered 413 establishments that were either fully foreign owned or in partnership with Nigerians, Nigerian institutions or companies doing business in Nigeria. Responses to questionnaires were received from 287 companies, representing a response rate of 69.5 percent. Statistical adjustments were however made for the non-responding institutions.

The aggregate flow of foreign private investment in Nigeria recorded a net inflow of N3,907.2 million in 1994, indicating a decline of 88.2 percent below the 1993 level. The companies of Western Europe (excluding the U.K) were mainly responsible for the sharp drop in net inflow. The region registered a net outflow of N267.4 million in the review

period as against a huge inflow of N22,558.3 million in 1993. Asia's investment flows into Nigeria in the last couple of years continued its upward trend, as companies of the region led other regions with a net inflow of N1,415.4 million, representing 36.2 percent of total net inflow. The region was followed closely by companies of U.S. and U.K origins which registered net inflow of N1,387.0 million and N1,136.7 million or 35.5 percent and 29.1 percent of the total net inflow, respectively. However, the contributions of companies of U.S and U.K origins fell by 77.0 percent and 68.7 percent, respectively, from their levels in the preceding year. The net inflow from companies of "other unspecified countries" also dropped by 2.6 percent from N241.1 million in 1993 to N234.9 million. (see tables).

3.5 **Pattern and direction of changes in the Manufacturing sector 1980-1996**

From the data provided by the Central Bank of Nigeria Economic and Financial Review (various issues) Cumulative investment in the manufacturing and processing sector increased by 8.5 percent from its 1984 level of N2,109.3 million to N2,278.1 million in 1985. At these levels, the shares of the sector in the aggregate cumulative investment rose from 32.9 percent in 1984 to 33.5 percent in 1985. (see table 2). The increase was accounted for by increases of N154.4 and N14.4 million in the paid-up capital plus reserves and the other liabilities components respectively.

TABLE 2

Cumulative Foreign Private Investment in the Manufacturing and Processing Sector (1980-1996)
(₦m)

Year	Paid-up Capital and Reserves	Other Liabilities	Total	Percentage distribution of Total
1980	1085.4	418.5	1503.9	41.5
1981	1147.4	558.3	1705.7	45.4
1982	1233.1	689.4	1922.5	35.7
1983	1388.4	739.7	2128.1	35.8
1984	1541.2	568.1	2109.3	32.9
1985	1695.6	582.5	2278.1	33.5
1986	1921.4	888.8	2810.2	30.2
1987	2174.9	947.4	3122.3	31.2
1988	2596.0	1041.0	3637.0	32.1
1989	3537.4	1869.0	5406.4	49.6
1990	4937.4	1401.6	6339.0	60.7
1991	7011.8	1680.6	8692.4	71.0
1992	7707.1	2039.2	9746.3	47.5
1993	10400.4	2484.7	12885.1	19.3
1994	11176.8	2883.1	14059.9	19.9
1995	25186.7	2482.1	27668.8	23.2
1996	27063.1	2751.2	29814.3	24.3

Source: CBN Economic and Financial Review. Various issues (1980 -1997).

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TABLE 3

Some Nigeria Economic Indicators (1980-1996)

Year	GNP per Capital (N)	GDP at 1984 factor cost (N"b)	Gross National savings (N'b) at 1984Mkt. prices	Population and Demography (million)	Manufacturing (capacity utilisation)	Crude oil production (mbpd)	Net Foreign Private Invest. as % of GDP.	Gross Domestic Invest. as % of GDP.	External public debt outstanding ($US Billion)	Nigeria's Extenal Reserve ($m)
1980	-	-	-	64.7	70.1	2.082	0.94	21.84	3.5	9901.19
1981	-	70.4	3.9	66.8	73.3	1.439	0.27	24.21	3.8	3975.08
1982	-	70.2	4.5	68.4	63.6	1.289	3.15	21.18	10.1	1532.09
1983	-	66.4	4.8	70.7	49.1	1.235	1.00	14.35	11.9	1043.27
1984	-	63.0	2.7	73.0	42.0	1.390	0.85	8.60	16.7	1485.45
1985	-	68.9	3.6	75.5	37.1	1.499	0.46	7.81	15.7	1843.93
1986	660.1	71.1	3.8	77.9	38.9	1.468	3.47	10.15	15.3	2073.64
1987	639.8	70.7	7.9	80.5	40.4	1.324	0.64	9.98	25.1	1169.60
1988	686.0	77.8	10.57	83.2	41.5	1.451	0.94	8.68	31.1	720.86
1989	958.7	83.5	15.60	84.9	42.4	1.715	-0.23	9.51	31.4	1825.93
1990	1,027.1	90.3	19.29	86.7	40.3	1.810	-0.20	13.21	33.2	4347.40
1991	1,055.6	94.6	16.66	88.5	42.0	1.890			33.4	
1992	1,047.2	97.4	12.73	91.0	38.1	1.944			27.5	
1993	1,042.8	100.0	10.4	94.1	35.0	1.960			28.7	
1994	1,033.0	101.4	12.27	96.8	30.4	1.910			29.5	
1995	1,028.0	103.5	11.1	99.5	29.1	1.960			32.6	

Sources: CBN Economic and Financial Review. Various issues (1980-1997)
CBN Statistical Bulletin Various issues (1991-1997)

The Manufacturing and processing sector continued to be the beehive of foreign investors' activities in the country, as the sector accounted for about 75 percent of the aggregate foreign capital in 1991. Most of this group are engaged in import substitution industries.

The level of cumulative investment in the Manufacturing and processing sector increases from N12,885.1 million in 1993 to N14,059.9 million in 1994. This increase was contributed to by the rise in the values of both paid-up capital plus reserves and other liabilities The aggregate investment in this sector was due largely to 20 of the industrial groupings which registered increases in their cumulative investment levels against preceding year's position.

3.6 Main Factors and Impediments to Private foreign Investment in Nigeria.

Investment is the engine of economic growth and development. It puts national savings to productive use, caters for future job creation requirement, generates income and perpetuates the process of growth. In both developing and developed countries of the world, the volume of investment as well as the quality and judicious selection of investment projects are critical to economic growth and development. The flow of foreign investment to complement domestic investment is a major focus of policy in all countries of the world (FGN. 1993).

In Nigeria, both the volume and the quality of productive investments, especially since the early 1980s, raise concern. The flow of foreign investment into the country has been very minimal despite Nigeria's existing natural attractions to investors such as larger domestic market, a geographical location capable of taking advantage of regional and continental markets, substantial natural resources, relatively cheap labour and a considerable amount of entrepreneurial talent. As shown in table 3, net foreign private investment as a percentage of the Gross Domestic Product (GDP) was not only low but also on the downward trend in the decade of the 1980s. It declined from 0.94 per cent in 1980 to 0.27 percent in 1981; but subsequently increased to 3.15 per cent in 1982. Thereafter, it fell to 0.46 per cent in 1985. It rose to 3.47 per cent in 1986 but has been on the decline thereafter. Moreover, Gross Domestic Investment (GDI) as a percentage of GDP has been on the decline since the beginning of the 1982 economic crisis. GDI fell from over 24 per cent in 1981 to 14.35 per cent of GDP in 1983, 10.15 per cent in 1986, and to 9.51 per cent in 1989. A considerable investment effort is therefore, needed to develop new markets, and to ensure that present methods of production, the sourcing of inputs, and the composition of output reflect the new price signals.

Foreign capital is highly mobile and the competitive environment must ensure retention of foreign investment

already on ground as a pre-condition for attracting new ones. Before the global debt crisis that began in 1982, private foreign investment was attracted to a country on account of certain key factors such as relative cost of labour, abundance of raw materials, the existing level of foreign investment in the country, Gross Domestic Product (GDP), the per capital income and the degree of political and policy stability (FGN. 1993).

Increasingly, such conditions as the quality of infrastructure, the consistency of government policies, the presence of an industrial fabric, the ability to stimulate and sustain domestic investment in the first instance, have become the basic conditions for attracting additional foreign investment. Most fiscal incentives are useful only when production has taken place and are therefore critical factors in terms of sustaining and expanding production.

In recent years, however, foreign private investment appears to be strongly influenced by the ability of a country to settle its international debts and its willingness to adopt and implement a Structural Adjustment Programme (SAP). Since foreign investors do not have independent yardstick for assessing the investment potentials especially of developing countries, the International Monetary Fund's (IMF) certificate

of clean bill of health is a major indicator of a country's qualification for inflow of foreign investment (FGN.1993).

In the case of Nigeria, a number of factors which significantly undermine the various efforts being made to attract foreign investment into the country have been identified. Some of the identified factors are:

i) inconsistent in Government policies which creates an uncertain business climate and so makes meaningful planning operations difficult;

ii) instability of the political and economic environment in which foreign investment projects have to operate. Foreign direct investment inflows have been adversely affected by uncertainties engendered by earlier periodic shifts in the macro policy stance;

iii) doubts regarding the sustainability of the government's adjustment measures, particularly after the scheduled transfer of power to a civilian government. Presently, foreign investors are seen as adopting a "wait and see" attitude.

iv) inadequate infrastructural facilities such as transportation, energy, water and telecommunications thereby leading to increased investment capital outlays;

v) absence of some key infrastructural projects --

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metal alloy foundries, machine tools, etc.-- whose establishment cannot be left to the private sector alone because of the large size of the investment involved;

vi) poorly developed industrial fabric. The upstream and downstream firms needed as input suppliers and processors of a company's products are virtually non-existent. The non-availability of services to a firm to enable it concentrate on its own specific activities is another important aspect of this fabric;

vii) inability of the country to settle its international debts resulting from the economic depression being witnessed in Nigeria since the beginning of the decade of the 1980s;

viii) competition among the various countries for the limited investible funds which has arisen from the ideological re-orientation in Eastern Europe, and ;

ix) insecurity of persons and property.

Developing countries, like Nigeria, are highly indebted and their ability to settle these debts is often questioned. The Structural Adjustment Programme (SAP), which is designed to restructure and stimulate the growth of investment in Nigeria, has had successes and reversals; foreign investment inflow is far less than anticipated. Yet, more than ever

before, the growth of foreign investment as a stabilising and complementary force to domestic investment is critical. Nigeria's current focus of policy on foreign investment promotion attests to this critical importance.

In these abnormal times, the ability to settle international debt has become the over-riding condition for attracting foreign investment. Attractive fiscal incentives, against the back drop of mounting difficulties in debt-service payments, do not pave the way for the inflow of new foreign investment. The current high cost of foreign exchange in Nigeria is explained largely by debt service obligations, and by the use of unremitted Naira-based profits as foreign investment (FGN. 1993).

3.7 Regulatory and institutional arrangements.

Over the years, at least up to 1988, when the most recent industrial policy guidelines were introduced, the institutional arrangements to facilitate the inflow of foreign investment had been rather unsatisfactory. Foreign investors had to go through tortuous, time consuming and costly procedures before obtaining the mandatory business permits required for company incorporation; obtain approvals for expatriate quota, pioneer status, and secure technical and management agreements and approved-user status. These had to be processed in different government ministries and agencies.

The experience of paying frequent visits to relevant ministries with overlapping jurisdictions in the administration of the incentives and regulatory framework, no doubt discouraged foreign investment inflow (Odozi, 1995).

Also, discretionary powers, ambiguities and in some cases, anachronistic provisions characterised the legislations governing foreign investments.

3.8 **Macroeconomic Environment**

Another important factor that constrained foreign investment inflow to Nigeria was the type of Macro economic policies adopted in the management of the Nigerian economy. Before the introduction of Structural Adjustment Programmme (SAP) in 1986, economic management relied mainly on direct controls in all the sectors of the economy. Monetary policy was based on the strategy of mandatory credit ceilings on individual banks and administratively determined interest rates which discriminated among many sectors (Odozi, 1995). Government fiscal operations also resulted in persistent deficits financed by borrowing from the banking system. The real sector policies also depended on price controls and a system of subsidies. Government participation in industry and agriculture was evasive, with major basic enterprises being wholly-owned or controlled by government.
(Odozi, 1995).

This left significantly reduced role of private investment whether foreign or indigenous. The external sector policies also relied on exchange control regulations which were supported by an over-valued fixed Naira exchange rate regime, quantitative quota restriction, outright banning of the importation of many commodities, import licensing and strict foreign exchange rationing. Also, the strategy of import substitution was combined with the policy of industrial protection achieved through the erection of tariff barriers with a view to shielding domestic manufacturers from foreign competition.

The adverse effects of these measures on foreign investment enterprises included substantial low capacity utilization, strong and high import dependence, high cost of production leading to uncompetitiveness in international trade and the consequent inability to export manufactured products. The loss of competitiveness also discouraged agricultural production both for domestic use and export. This development combined with the over-valuation of the Naira exchange rate, intensified the foreign exchange constraint on the economy, and rendered the sustainability of the inappropriate macroeconomic policies difficult. The financial, trade and exchange rate policies were totally inappropriate for foreign and domestic investments as the economic environment was characterized by instability and distortions arising from the

adminisrative control measures that fixed basic prices well below what would have ruled given the prevailing market fundamentals. Such control measures led to the proliferation and growth of parallel markets and sustained capital flight. (Odozi, 1995).

3.9 Current debate on Privatisation, Liberalisation and reduced role of Government.

Various issues of The Monitor a quarterly Newsletter of the Bureau of Public Enterprises from 1997 -1999 showed that almost all developing and many developed economies face similar rapidly growing demand for power, telecommunications and associated infrastructure, but markedly insufficient public funds. As the experience in Nigeria and of many other countries indicates, closing this infrastructure gap is imperative. Implementing a proper structure of privatisation programme can be a critical catalyst for achieving this objective while also providing highly attractive investment opportunities for both foreign and domestic institutions.

It is widely acknowledged that the inefficiency problems of the Nigerian infrastructural services sector is a major contributory factor to the high operating costs of the real sector (BPE, 1999). Many manufacturing firms, for instance, have to own parallel electricity generating plants, water supply systems, haulage services, and in some cases,

telecommunication services. All these add significantly to production costs. Conversely, huge sums are allocated annually from the Government treasury as subvention to these failed enterprises. Herein lies the overriding reason for the widespread clamour for privatisation.

The power to privatise and commercialise public enterprises in Nigeria was vested in the Technical Committee on Privatisation and Commercialisation (TCPC) and now Bureau of Public Enterprises (BPE) by Decree 25 of 1988 and Decree 78 of 1993 respectively. The Decree flagged off the programme of privatisation in full motion. It stipulated that the Commission must ensure the success of privatisation and commercialisation programme taking into account the need for balance and meaningful participation by Nigerians and the foreign interest in accordance with the relevant laws in Nigeria.

In the 1998 budget, it was stated that government enterprises in telecommunications, electricity, petroleum refining, petrochemicals, coal and bitumen products and tourism development would be privatised in the first phase of the programme. It was further stated that government would retain at most 40% of the equity in the enterprises to be privatised, while at least 20% equity would be sold to Nigerians.

Out of an estimated 600 public enterprises in Nigeria, 145 public enterprises spread in all sectors of the economy were identified and listed in the privatisation and commercialisation Decree 25 of 1988 for either partial or full privatisation or full commercialisation.

An interesting debate on privatisation has been the question of whether the programme has been and would be able to achieve its set objectives or not. Privatisation is seen as a crucial element of the ongoing economic reforms. Public enterprises, especially those involved in the provision of utilities, such as energy and telecommunication services, have over the years imposed severe burden on business and the Nigerian economy as a whole. This burden is essentially two dimensional. First, the inefficiency of the enterprise impacts considerably on the cost of production and general economic activities in the economy, a factor which affects the competitiveness of the productive activities within the economy. Second, the huge annual subvention to these enterprises constitutes an enormous fiscal burden on the nations treasury and deprives the country of scarce resources which would otherwise have been deployed to enhance the quality of social services and improve the welfare of citizens (BPE, 1999).

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Among the benefits associated with privatisation include

reduction of government spending and enhanced revenue; efficiency in resources allocation; improve performances of the affected enterprises; fostering of a deepened capital market; enhancing the scope for foreign direct investment; and can be used to spread ownership of privatised enterprises.

Opponents of privatisation however, usually hinge their arguments on the fact that there are certain strategic industries such as defence and security, power and energy, health, public utilities, education and others, the privatisation of which will not only put the prices of goods and services produced by these sectors beyond the reach of the common man, but will also threaten such commonly shared values and ideals as national security and sovereignty. They argue that privatisation is mere transfer of economic (and by extension, political) power from state sovereigns to corporate sovereigns. Some go as far as expressing the fear that while the present millennium has been characterised by colonization of some countries by others, the next will witness the colonization of whole continents by multinational corporations.

Opponents of privatisation further hold that new international economic order is gradually being steered by western capitalists towards a situation where ownership and control over the natural resources of the earth will no longer

be determined by the sovereignty of nations but by the economic interests of individuals and multinationals in the economics of nations.

Another opposition to privatisation has to do with the negative fallouts from implementations, not with the policy per se. Such fallouts include inevitable rise of unemployment levels due to lay-offs that occasioned by down-sizing; unrealistic pricing of enterprises which are then sold to favoured bidders at ridiculously low prices; monopolisation of choice enterprises by some few rich persons, and the domination of local economies by foreign interest.

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Some of the following problems and constraints were identified as militating against the full realisation of the objectives of the privatisation programme as being conceived in Nigeria: Some assets of the privatised enterprises may have been undervalued in comparison to their realisable values; a number of enterprises slated for privatisation could not attract buyers when put up for sale, these enterprises have continued to constitute a drain on the treasury resources; there were long delays in the processing of share applications, applicants had to wait for long periods before receiving their share certificate and refunds, where applicable; foreign investment could not be attracted because

of the prevailing restrictions on investment in the Nigerian capital markets; TCPC's mandate was restricted to enterprises already chosen for privatisation by government and so many other enterprises that ought to be privatised were left out; there was resistance to the programme from some people who were suspicious of it, probably because they did not understand it.

Suggestions have been made that government's equity in these enterprises should be low in order to encourage private local and foreign investors to participate in the privatisation exercise. More importantly, the management and control of these enterprise should rest squarely with the private sector, preferably, the strategic investor who normally would possess the technological and managerial capability to run the enterprises. It should be stressed that poor management and undue political interference constituted the bane of public enterprises in Nigeria. The past experience should guide the current privatisation initiative.

To achieve the objective of privatisation, suggestions have been made that government should disengage from all commercial activities as these are better performed by the private sector. The main role of government should be to create an enabling environment for business through the provision of basic infrastructural and social services.

What lessons can we learn from Nigeria's current debate on privatisation ? It would be fair to observe that the Nigerian privatisation debate centred on whether or not key government enterprises should be privatised, the timing, speed and modalities of the privatisation exercise itself. It is not conclusively well agreed amongst various interest groups in the country, that state-owned enterprises should be privatised. In other word, there is actually no concensus. Government simply take a position being also pressurized by external bodies.

Given arguments for and against it, it begins to appear that privatisation as an economic policy holds a lot of promise especially for cash strapped developing nations of sub-saharan Africa, provided the process itself is well planned, structure and implemented to minimize some of the negative effects that are constantly harped upon by its opponents. For one thing, a number of factors that hampered the privatisation process in Africa in the past have dramatically changed over the years. First, most of the erstwhile marxist regimes in Africa, with no experience of liberty or law have been replaced by elected regimes that are laying the foundations for order and human rights. Second, the bureaucratic mindset that government knows all is gradually giving way to the concept of minimal government of tested business principles. And lastly, the World Bank, in the last

few years or so, has been moving from public to private sector lending. Thus even though there are still enormous problems of political instability in Africa, privatisation is going on steadily.

Liberalisation on the other hand was actually recommended to developed countries in order for them to take certain action to reform some of their industries that would enable greater market access for developing countries' products. The major event that brought liberalisation policy reform to many developing countries was the oil crisis and its attendant adverse consequencies such as increased oil prices, high interest rates and stagflation. The situation of many developing countries became worsened by the debt crisis which resulted early in the 1980s and brought to the fore by Mexico when in early 1982 it could no longer service its external debt. From that time, all indebted developing countries were made to undertake a policy reform which involved trade liberalisation, privatisation, reduction of public expenditure, etc.

The external shocks which resulted in increased balance of payments deficits for most developing countries were seen as permanent. In this regard, the previous International Monetary Fund (IMF) short-term balance of payments adjustment measures were considered inadequate as it was believed then

that nothing short of medium-term supply - side structural adjustment programmes would be adequate to bring about a balance of payments turn-around. The justification for such wide-ranging measures was not only on external disequilibrium but also on domestic mismanagement.

Under the active prodding of International Monetary Fund (IMF) and the World Bank, the forces of liberalisation have carried the day. Obtaining the structural adjustment loans of these institutions by the countries in crisis is conditioned on the adoption of liberalisation policies. Would-be donors and creditors line up behind the Bretton Woods Institutions whose approval of any country's reform programme is to them a "clean bill on health". Other advantages derived by any country that adopts structural adjustment include the prospects of private capital investment inflows and their beneficial effects, high level of financial assistance, and rescue operations that have been undertaken in a few cases. Explanations for failure of liberalisation programmes in many countries have been attributed to such programmes not properly implemented, or not intensely carried out for along time. In recent times, however, some concession have been made regarding programmes failure such as in the Washington consensus, which allows some intervention in the domestic market to correct for market failure. Also, there has been calls for a more humane adjustment, that is, adjustment with

a "human face" in which a minimum level of consumer welfare should be guaranteed. It has to be noted at this stage, that any adequate reform must address the growth-poverty relations, which is what the countries of the South East Asia have achieved. However, liberalisation has proceeded at different speeds in different ways and with different groups of countries.

CHAPTER FOUR

THEORETICAL FRAMEWORK

4.0 Introduction

In this chapter, the theoretical framework upon which this study rests is presented. Three basic approaches that could be used in a study of this nature are presented and analysed; with the view of obtaining and applying the most relevant to the situation of Nigeria. The first is the production function approach, followed by the capital imports and growth models approach and finally the savings-investment gap approach developed by Thirwal (1982).

4.1 The Production Function approach to analysis of growth.

One of the basic desirable properties of any macro-economic hypothesis, apart from being consistent with the observed facts, is that it should be consistent with, and derivable from, micro-economic theory. The production function we used in this study to analyse economic growth as a result of private foreign investment in the manufacturing sector in the aggregate, has this desirable property of being derivable from micro-economic theory, in that it borrows the concept of the production function from the theory of the firm.

Just as it can be said for a firm that output is a function of the factors of production - land, labour, capital

and the level of technology (or factor efficiency) - so aggregate output can be written as a function of factor inputs and the prevailing technology i.e.

$$Q = F(R, K, L, T)$$

Where R is land, k is capital, L is labour and T is technology.

In a similar vein, Mona Haddad and Ann Harrison (1993) whose approach and by extension we are adopting in this study, employed a rather simple regression equation derived from the conventional production function equation to test and analyse the impact of direct private foreign investment on productivity in Morrocco.

In their study, to examine whether foreign presence affects the rate of productivity growth, a production function with value-added - a function of two inputs, capital and labour was used.

To examine whether foreign presence affects the rate of productivity growth, we begin with a production function, with value-added Q (a function of two inputs, capital and labour)

$$Qijt = Aijt\ F(Lijt,\ Kijt). \qquad \ldots\ldots\ldots\ldots (4.1.1)$$

Where

Qijt = Value-added in firm i sector j in time t.

Aijt = Level of productivity in firm i sectorj in time t

Lijt = Labour in firm i sector j in time t.

Kijt = Capital in firm i sector j in time t.

t = time.

The level of productivity is given by Aijt, which is assumed to vary across firms within each sector j and across time t. If we totally differentiate this equation, take logs and use the fact that the value of the marginal product for each factor equals its cost, we now have,

$$dlogQijt = dlogAijt/Aijt + a_l dlogLijt + a_k dlogKijt + Ut$$

.....(4.1.2)

Where Q is value-added, dA/A is productivity growth, and L and K are labour and capital, respectively. The coefficients on the growth of labour and capital are simply their share in value-added. We test the hypothesis that productivity growth

is affected by the share of foreign investment both at the firm level and the sector level by assuming that productivity growth can be decomposed into the following components:

$$dAijt/Aijt = a + bDFI_FIRMijt + cDFI_SECTORjt + dCj + Ut \quad \ldots\ldots(4.1.3)$$

Where

DFI_FIRMijt =Direct private foreign investment in firm i sector j in time t.

DFI_SECTORjt = Direct private foreign investment in sector j in time t.

C_j = sector dummy.

U_t = error term

Productivity growth varies across sectors (j) and time (t) and also varies as a function of the level of foreign investment in both firms and sectors. The coefficient on DFI_Sector measures the so-called positive spillover - the extent to which the presence of DFI increases the rate of productivity growth, after accounting for other factors. Combining equations (4.1.2) and (4.1.3) yields

$$dlogQijt = a + bDFI_FIRMijt + cDFI_SECTORjt + dCj +$$

$$a_l dlogLijt + a_k dlogKijt + Ut \quad \ldots\ldots\ldots\ldots (4.1.4)$$

Thus, with these equations they were able to see the impact of foreign investment in the manufacturing sector on the level of productivity growth.

It is note worthy that the presentation above is based on some fundamental assumptions. First, the model like most models of investments in developing countries assumes a homogenous group of firms operating on competitive products and factor market under condition of general equilibrium.

No doubt, application of such models to developing country like Nigeria could be fraught with lapses. First, the obvious unreality of the assumption of perfect competition provides an early mark for critics maintaining that such models derived from the neo-classical models say little about firm behaviour in the real world.

The argument goes further that the private sector in developing countries may not be homogenous, being mostly made up of heterogenous types of firms and household groups which have distinct objective functions and face different constraints. In consequence, the microeconomics assumptions

about business behaviour in both neoclassical and keynesian investment models may be quite invalid in developing country practice with considerable implications for the impact and effectiveness of macroecenomic policy.

The production approach presented above was employed by Monna Haddad and Ann Harrison to analyse the impact of direct private foreign investment on productivity growth in manufacturing in Morrocco taking into consideration the peculiar characteristics of the morroccan manufacturing firms. Firm level dataset was used in their study and substantial information which could help formulate government as well as private policies was obtained.

Based on the successful application of this approach to the Morroccan manufacturing firms, this study attempts to adopt the same method, though due to unavailabity and inconsistent data, not at the firm level but at the sub-sector level.

4.2 Capital imports and growth models approach:

Various approach have been used by different authors to develop models to explain capital imports and growth. Of relevance to this study is the Thirwal (1982) approach. Thirwal initially developed a capital imports model which used the production function approach to show how capital imports

can raise the growth rate, but the flaw in this model was that it did not consider how capital imports are financed and how the terms of borrowing may affect the growth rate. A later version which incorporates these considerations and which was of relevance here was later developed. It is basically based on two assumptions:

a) The rate of growth of output will be faster with capital imports provided new inflows of foreign capital exceed the loss of domestic savings to pay interest. If however, interest charges are met by new borrowing, capital imports must always have a favourable effect on the growth rate of output; and

b) The rate of growth of income will be faster as long as the productivity of capital imports exceeds the rate of interest. The model is as follows:

Let $Q = Y + rD$ .....(4.2.5)

Where, Q is output, Y is income, r is the interest rate and D is debt. The difference between domestic output and national income is factor payment abroad. From equation (4.2.5) we have,

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$$\Delta Q = Y + r\Delta D \quad .....(4.2.6)$$

Now,

$$\Delta Q = \sigma I \qquad \ldots\ldots\ldots (4.2.7)$$

Where σ is the productivity of capital and

$$I = sQ + \Delta D - srD \qquad \ldots\ldots\ldots (4.2.8)$$

Where s is the propensity to save.

Substituting equation (4.2.8) into (4.2.7) and dividing by Q gives an expression for output - growth of:

$$\frac{\Delta Q}{Q} = \sigma\left(s + \frac{\Delta D - srD}{Q}\right) \qquad \ldots\ldots\ldots (4.2.9)$$

Equation (4.2.9) shows that the growth of output will be higher than the rate obtainable from domestic saving alone as long as $\Delta D > srD$, that is as long as new inflows of capital exceed the amount of outflow on past loans that would otherwise have been saved. This is a fairly stringent condition unless it is assumed that the interest payments due are met by creating new debt.

It can be seen from equation (4.2.9) that if $rD = \Delta D$, the rate of growth of output with capital imports will always be higher than without capital imports as long as $S < I$ (which is the normal case to consider). It may be concluded, then

that, if interest payments on past loans can be borrowed in perpetuity, there is a permanent gain to be had from running an import surplus. In practice however, a country that continually rescheduled its debts might ultimately be classified by the international community as uncreditworthy and therefore not be able to borrow continuosly.

Now let us consider the rate of growth of income as the dependent variable from (4.2.5)

$$\Delta Y = \Delta Q - r \Delta D \qquad \text{.....(4.2.10)}$$

Substituting (4.2.8) into (4.2.7) and the result into (4.2.10) gives:

$$\Delta Y = \sigma(sQ + \Delta D - srD) - r \Delta D \qquad \text{.....(4.2.11)}$$

Now, since $Y = Q - rD$, we can also write (4.2.11) as:

$$\Delta Y = \sigma sY + \Delta D(\sigma - r) \qquad \text{.....(4.2.12)}$$

and dividing through by Y we have an expression for the rate of growth of income:

$$\frac{\Delta Y}{Y} = \sigma s + (\sigma - r)\frac{\Delta D}{Y} \qquad \text{.....(4.2.13)}$$

Equation (4.2.13) shows that the growth rate of income with capital imports will be higher than that obtained from domestic savings alone as long as the productivity of capital imports (σ) exceed the rate of interest on foreign borrowing (r). This is a standard result showing that investment is profitable as long as the rate of returns exceeds the rate of interest. In some circumstances, however, this condition may be a fairly stringent one.

The basic flaw in this kind of model is that it is based on assumptions which could hardly be achieved in developing countries like Nigeria where the production and financial system is fraught with various lapses especially in management. First, the model assumes that the rate of growth of output will be faster with capital imports provided new inflows of foreign capital exceeds the loss of domestic savings to pay interest. Of course, it is clear that due to inefficient and administrative machineries developing coutries like Nigeria could hardly meet this requirement. The mechanism to achieve this is not there yet.

The second assumption that the rate of growth of income will be faster as long as the productivity of capital imports exceeds the rate of interest is also an assumption which requires a greater caution if one tries to apply this kind of model because as pointed out in literature this condition

could hardly be met in developing countries.

4.3 **The savings - investment gap approach**

In his analysis employing the dual-gap approach, Thirwal (1982) attempted to show the required amount of foreign capital imports for any target rate of growth r. In his analysis, for any target rate of growth, r, the required foreign assistance in the base year (Fo) is :

$$F_o = I_o - S_o = Y_o cr - Y_o sa = Y_o (cr - sa) \quad \ldots.(4.3.1.)$$

where,

I_o is investment in the base year period, so is savings in the base period, Yo is income in the base period, c is the incremental capital-output ratio, sa is the average savings ratio, and r is the target rate of growth.

If the rate of savings is expected to rise over time, the savings function may now be written as:

$$S_t = saY_o + s' (Y_t - Y_o) = (sa - s') Y_o + s' Y_t \quad \ldots \quad \ldots(4.3.2)$$

where s' is the marginal savings ratio. Rewriting investment requirements at time t as:

$$I_t = Y_t cr \quad \ldots\ldots\ldots\ldots(4.3.3)$$

and combining (4.3.2) and (4.3.3), we get the net inflow of capital required in time t:

$$F_t = Y_t cr - (sa - s') Y_o + s' Y_t \qquad \ldots\ldots\ldots\ldots (4.3.4)$$

or

$$F_t = (cr - s') Y_t + (s' - sa) Y_o \qquad \ldots\ldots\ldots (4.3.5)$$

The difference between borrowing requirements in the base year and borrowing in period t is the difference between equation (4.3.5) and (4.3.1) which reduces to

$$cr (Y_t - Y_o) - s' (Y_t - Y_o),$$

or

$$F_t - F_o = \Delta I - \Delta S \qquad \ldots\ldots\ldots\ldots\ldots (4.3.6)$$

That is, increments in external capital finance, the difference between investment requirements to sustain the target rate of growth and increases in savings generated by rising income. If foreign assistance is to decline (i.e Ft < Fo), s must be greater than ΔI. The savings-investment gap will disappear, and the phase of investment-limited growth come to an end, when domestic savings reaches a level adequate to sustain the target rate of growth. From (4.3.5) , the rate of growth that can be achieved within a given inflow of foreign capital is:

$$r = \frac{I}{c}\left[(\beta a - s)\ \frac{Y_o}{Y_t} + s + \frac{F_t}{Y_t}\right] \quad \ldots\ldots(4.3.7)$$

The derivative of r with respect to F is positive, so that a large inflow of foreign capital can achieve a higher growth rate, provided there is no rise in c - the capital output ratio - fall in s. One important fact here is that the model ignores how the inflow of capital is financed.

From the above presentation, it could be observed that though most of the assumptions of the production function approach are strigent; of all, this approach seems to be favourites of researchers and policy analysts because of its simplicity in application and obtainability of interpretable and reasonable results . It is in this regard that this study attempt at using this method.

CHAPTER FIVE

MODEL SPECIFICATION AND EVALUATION.

5.0 Introduction

In this chapter, we articulated the framework for the empirical investigation of the impact of Private Foreign Investment in the Manufacturing sector on the growth of the Nigerian economy over the period considered in this study.

5.1 The Base:

As earlier stated, a number of empirical studies have attempted to directly measure spillovers from foreign investment. In an early study Caves (1974) tested for the impact of foreign presence on value-added per worker in Australian domestically-owned manufacturing sectors. Caves found that the disparity between (higher) foreign and domestic value-added disappears as the foreign share of sectoral labour rises, which is consistent with positive spillovers from foreign presence.

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Globerman (1979) replicated caves' findings (1974) using sector-level cross section data for Canadian manufacturing industries in 1972. Globerman, however, was able to control explicitly for capital intensity in his estimation of value-added per worker. The results indicated only a weak effect -

none of the proxies for foreign presence in the sector was significant at the 5 percent level.

Most of the empirical work on spillovers from foreign investment focussed on the case study of Mexico, which gathers manufacturing data by ownership type. Blomstrom and Person (1983) reproduce Globerman's study using 1970 census data for 215 mexican manufacturing industries. Controlling for capital intensity, scale effects, and worker quality, Blomstrom and Person (1983) found that labour productivity was significantly higher in sectors where foreign firms employed a higher share of the labour force. Blomstrom (1986) and Blomstrom and Wolff (1989) extended the analysis of Mexican data to examine the impact of foreign presence on the dispersion of productivity and on the growth rate of total factor productivity (TFP).

Using sector-level data, Blomstrom (1986) found that an increase in foreign presence failed to increase productivity growth and faster convergence of productivity levels in sectors with higher levels of foreign ownership.

The authors believed that the study which examined the impact of foreign investment on firms in Morocco's manufacturing sector from 1985 through 1989, contributed to existing literature in two respects. They believe that the study was the first to employ a comprehensive dataset at the

level of the individual firm over several years. Consequently, they were able to compare explicitly the behavior of foreign and domestic firms by sectors, controlling for firm-specific attributes such as size. The panel nature of the data (which combine cross-section and time series) allows the authors to go beyond cross-section analysis comparing partial productivity measures (such as labour productivity) across different firms.

The results they obtained from the above exercise suggest that foreign firms exhibit higher levels of total factor productivity, but their rate of productivity growth is lower than that for domestic firms. At first glance, this would appear to support the Catch-up hypothesis -- Domestic firms, at lower initial levels of productivity, are able to increase efficiency at a faster rate.

However, their tests on the presence of any spillovers from foreign presence showed that although domestic firms exhibited higher levels of productivity in sectors with a larger foreign presence, they did not exhibit higher productivity growth in these sectors.

Second, they were able to use detailed information on the level of quota and tariff protection to test whether the lack of any spillovers stems from a tendency of foreign firms to

move towards protected sectors. They did not find evidence of such positive spillovers in either the protected or unprotected sectors, (Monna Haddad and Ann Harrison 1993).

Specification of the Model

The Impact of Direct Private Foreign Investment on Productivity Growth :

To examine whether foreign presence affects the rate of productivity growth, we begin with a production function, with value-added Q a function of two inputs, capital and labour

$$Qijt = Aijt\ F(Lijt,\ Kijt). \quad .....(5.4.1)$$

Where

Qijt = Value-added in sub-sector i sector j in time t.

Aijt = Level of productivity in sub-sector i sector j in time t.

Lijt = Labour in sub-sector i sector j in time t.

Kijt = Capital in sub-sector i sector j in time t.

t = time.

The level of productivity is given by Aijt, which is assumed to vary across sub-sector within each sector j and across time t. If we totally differentiate this equation, take logs and use the fact that the value of the marginal product for each factor equals its cost, we now have,

$$dlogQijt = dAijt/Aijt + a\hat{}logLijt + a_k dlogKijt + Ut \quad (5.4.2)$$

Where Q is value-added, dA/A is productivity growth, and L and K are labour and capital, respectively. The coefficients on the growth of labour and capital are simply their share in value-added. We test that the hypothesis that productivity growth is affected by the share of foreign investment both at the sub-secor level and the sector level by assuming that productivity growth can be decomposed into the following components:

$$dAijt/Aijt = a + bDFI_SUB\text{-}SECTORijt + cDFI_SECTORjt + dCj + U_t \quad (5.4.3)$$

Where

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DFI_SUB-SECTORijt = Direct private foreign investment in sub-sector i sector j in time t.

DFI_SECTOR_{jt} = Direct private foreign investment in sector j in time t.

C_j = sector dummy.

U_t = error term

Productivity growth varies across sectors (j) and time (t) and also varies as a function of the level of foreign investment in both sub-sectors and sectors. The coefficient on DFI_Sector measures the so-called positive spillover - the extent to which the presence of DFI increases the rate of productivity growth, after accounting for other factors. Combining equations (5.4.2) and (5.4.3) yields

$$Qijt = a + bDFI_SUB\text{-}SECTORijt + cDFI_SECTORjt + dCj + a_lLijt + a_kKijt + U_t \quad \ldots\ldots\ldots\ldots (5.4.4)$$

and;

$a > 0,\ b > 0,\ c > 0,\ l > 0,\ k > 0$

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The logarithm form of this yields,

$$dlogQijt = a + bDFI_SUB\text{-}SECTORijt + cDFI_SECTORjt + dCj + a_l dlogLijt + a_k dlogKijt + U_t \quad \ldots\ldots\ldots\ldots (5.4.5)$$

Thus, with these equations we shall be able to see the impact of foreign investment in the manufacturing sector on the level of productivity growth.

5.3 The Impact of Direct Private Foreign Investment on National Income

Similarly, using the conventional knowledge of regression analysis we could derive the impact of direct private foreign investment in the manufacturing sector as follows:

Here, the level of national income is made to be a function of direct foreign investment in SUB-SECTORijt, SECTORj, SIZE OF EMPLOY, and OUTPUT level.

Thus, we have

$$Yt = F(DFI_SUB\text{-}SECTORijt, DFI_SECTORj, EMPLOY_SIZEj, OUTPUT) \quad (5.4.6)$$

Where

Y_t = National income in time t.

EMPLOY_SIZEj = Employment size in sectorj

Output = Gross output

Thus, the regression form of this relationship is

$$Y_t = a + bDFI_SUB\text{-}SECTORijt + cDFI_SECTORj + dEMPLO_SIZEj + eOUTPUTj + fCj + U_t \quad .....(5.4.7)$$

$a > 0,\ b > 0,\ c > 0,\ d > 0,\ e > 0$

By taking the natural logarithms of this equation we have

$$\log Y_t = a + b\log DFI_SUB\text{-}SECTORijt + c\log DFI_SECTORj + d\log EMPLOY_SIZEj + e\log OUTPUTj + fCj + U_t \quad .....(5.4.8)$$

Where also, employing the Bosch, Sechi and others identities we have a situation where the behaviour of the Private foreign investment (PFI) sector is fully determined. Its direct impact on income is given by a simple production function with a given constant capital-output ratio:

$$Y_t = \frac{K_{t-1}}{k_t} \quad .....(5.4.9)$$

where

K_{t-1} = Capital stock in the direct private foreign investment manufacturing sector.

k_t = Capital output ratio in the manufacturing sector.

t = time.

and we assume that the capital stock (Kt) grows at a constant rate, assuming that Direct private foreign investment (DPFI) grows in proportion to its capital stock (k_t) :

$$K_t = k_o (1 + \&)^t \qquad \text{.....(5.4.10)}$$

Where

K_t = Capital stock in the Direct private foreign investment in the Manufacturing sector.

& = rate of growth of direct private foreign investment in the manufacturing sector.

t = time.

Also,

$$DFI_SUB\text{-}SECTOR_{ijt} = \& K_{t-1} \quad \ldots\ldots\ldots (5.4.11)$$

and

$$DFI_SECTOR_{jt} = \& K_{t-1} \quad \ldots\ldots\ldots (5.4.12)$$

5.4 The impact of Direct Private Foreign Investment on Private savings

For the impact of direct private foreign investment in the manufacturing sector on private or domestic savings, we employ the same approach as for the income. In other words, we make private savings or domestic savings in the economy to be a function of some variables. We thus, have:

$$S_{pt} = F(DFI_SUB\text{-}SECTOR_{ijt}, DFI_SECTOR, EMPLOY_SIZE, OUTPUT) \quad \ldots\ldots\ldots (5.4.13)$$

Where

S_{pt} = Private savings.

The regression form of this equation could be written as:

S_{pt} = a + bFDI_SUB-SECTORijt + cDFI_SECTORj +

dEMPLOY_SIZEj + eOUTPUTj + fCj + Ut ...(5.4.14)

a > 0, b > 0, c > 0, d > 0, e > 0

The natural log form of this equation is :

$\log S_{pt}$ = a + blogFDI_SUB-SECTORijt + clogDFI_SECTORj

+ dlogEMPLOY_SIZEj + elogOUTPUTj + fCj + Ut

.....(5.4.15)

Where the indentity

$S_{pt} = S_{po} + \$(Y_t - Y_o)$ .....(5.4.16)

holds as in the case of Bosch, Secchi and others.
This shows that the behavior of private savings are fully determined and are (private savings) obtained from the marginal propensity to save (MPS) in the economy as shown above.

5.5 The impact of Direct Private Poreign Investment on Public Savings

In the like manner as to income and savings impact of direct private investment in the manufacturing sector,

the public savings effects is derived by making the public or government savings a function of some variables thus,

S_{gt} = F(FDI_SUB-SECTORijt, DFI_SECTORj, EMPLOY_SIZEij, OUTPUTj) .....(5.4.17)

The regression form of this equation is of the form:

S_{gt} = a + bFDI_SUB-SECTORijt + cDFI_SECTORj + dEMPLOY_SIZEij + eOUTPUTj + fCj + Ut .....(5.4.18)

a > 0, b > 0, c > 0, d > 0, e >0

Where

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S_{gt} = Government savings.

and the logarithms form of this equation yields

$\log S_{gt}$ = a + blogFDI_SUB-SECTORijt + clogDFI_SECTORj + dlogEMPLOY_SIZEij + elogOUTPUT +fCj + Ut .....(5.4.19)

Again, the function

$$S_{gt} = T_t - G_t \quad \text{.....(5.4.20)}$$

holds.

Where

T_t = Total taxes on DPFI in the manufacturing sector. (In other words Government revenue in the DPFI manufacturing sector.)

G_t = Government current expenditure in the DPFI in the manufacturing sector.

Where also the function,

$$G_t = G_o (1 + @)^t \quad \text{.....(5.4.21)}$$

holds. Since we assume that Government revenue and expenditure directly relate to Private Foreign Investment (PFI) in the manufacturing sector. Government current expenditure is thus assumed to grow at a constant rate with respect to the base year situation.

and,

@ = rate of growth of public expenditure in the DPFI manufacturing sector.

5.6 The Model

Productivity growth

$$Qijt = Aijt\ F(Lijt,\ Kijt). \quad ......(5.5.1)$$

$$dlogQijt = dAijt/Aijt + a_l\ dlogLijt + a_k\ dlogKijt + Ut \quad ....(5.5.2)$$

$$dAijt/Aijt = a + bDFI_SUB\text{-}SECTORijt + cDFI_SECTORjt + dCj + U_t \quad ....(5.5.3)$$

$$Qijt = a + bDFI_SUB\text{-}SECTORijt + cDFI_SECTORjt + dCj + a_l\ Lijt + a_k\ Kijt + Ut \quad ....(5.5.4)$$

$$dlogQijt = a + bDFI_SUB\text{-}SECTORijt + cDFI_SECTORjt + dCj + a_l\ dlogLijt + a_k\ dlogKijt + Ut \quad ...(5.5.5)$$

$$Y_t = F(DFI_SUB\text{-}SECTORijt,\ DFI_SECTORj,\ EMPLOY_SIZEj,\ OUTPUT) \quad .... \ (5.5.6)$$

National Income

$$Y_t = a + bDFI_SUB\text{-}SECTORijt + cDFI_SECTORj + dEMPLO_SIZEj + eOUTPUTj + fCj + Ut \quad ......(5.5.7)$$

$$\log Y_t = a + b\log DFI_SUB\text{-}SECTOR_{ijt} + c\log DFI_SECTOR_j + d\log EMPLOY_SIZE_j + e\log OUTPUT_j + fC_j + U_t \quad \ldots(5.5.8)$$

$$Y_t = \frac{K_{t-1}}{k_t} \quad \ldots\ldots\ldots(5.5.9)$$

$$K_t = k_o\,(1 + \&)^t \quad \ldots\ldots(5.5.10)$$

$$DFI_SUB\text{-}SECTOR_{ijt} = \& K_{t-1} \quad \ldots\ldots\ldots(5.5.11)$$

$$DFI_SECTOR_{jt} = \& K_{t-1} \quad \ldots\ldots(5.5.12)$$

Private Savings

$$S_{pt} = F(DFI_SUB\text{-}SECTOR_{ijt}, DFI_SECTOR, EMPLOY_SIZE, OUTPUTj) \quad \ldots\ldots\ldots(5.5.13)$$

$$S_{pt} = a + bFDI_SUB\text{-}SECTOR_{ijt} + cDFI_SECTOR_j + dEMPLOY_SIZEj + eOUTPUTj + fCj + Ut \quad \ldots\ldots\ldots(5.5.14)$$

$$\log S_{pt} = a + b\log FDI_SUB\text{-}SECTOR_{ijt} + c\log DFI_SECTOR_j + d\log EMPLOY_SIZEj + e\log OUTPUTj + fCj + Ut \quad \ldots(5.5.15)$$

$$S_{pt} = S_{po} + \$(Y_t - Y_o) \quad \text{.....(5.5.16)}$$

Public Savings

$$S_{gt} = F(FDI_SUB\text{-}SECTORijt,\ DFI_SECTORj,\ EMPLOY_SIZEij) \quad \text{.....(5.5.17)}$$

$$S_{gt} = a + bFDI_SUB\text{-}SECTORijt + cDFI_SECTORj + dEMPLOY_SIZEij + eOUTPUTj + fCj + Ut \quad \text{....(5.5.18)}$$

$$\log S_{gt} = a + b\log FDI_SUB\text{-}SECTORijt + c\log DFI_SECTORj + d\log EMPLOY_SIZEij + e\log OUTPUTj + fCj + Ut \quad \text{.....(5.5.19)}$$

$$S_{gt} = T_t - G_t \quad \text{.....(5.5.20)}$$

$$G_t = G_o\ (1 + @\ )^t \quad \text{.....(5.5.21)}$$

5.7 Definition of Terms

Qijt = Value-added in sub-sector i sector j in time t.

Aijt = Level of productivity in sub-sector i sector j in time t.

Lijt = Labour in sub-sector i sector j in time t.

Kijt = Capital in sub-sector i sector j in time t.

t = time.

DFI_SUB-SECTORijt = Direct private foreign investment in sub- sector i sector j in time t.

DFI_SECTORjt = Direct private foreign investment in sector j in time t.

C_j = sector dummy.

U_t = error term

Y_t = National income in time t.

EMPLOY_SIZEj = Employment size in sectorj

Output = Gross output

K_{t-1} = Capital stock in the direct private foreign investment manufacturing sector.

k_t = Capital output ratio in the manufacturing sector.

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K = Capital stock in the Direct private foreign investment manufacturing sector.

& = rate of growth of direct private foreign investment in the manufacturing sector.

S_{pt} = Private savings.

S_{gt} = Government savings.

T_t = Total taxes on DPFI in the manufacturing sector. (In other words Government revenue in the DPFI Manufacturing sector.)

G_t = Government current expenditure in the DPFI in the manufacturing sector.

@ = rate of growth of public expenditure in the DPFI manufacturing sector.

CHAPTER SIX

MODEL ESTIMATION AND ANALYSIS

6.0 Introduction

The Ordinay Least squares (OLS) estimation method with secondary data from 1980 to 1996 was applied in the estimation procedure. Also, in order to determine whether long-run relationship exists among the variables, the series were tested for stationarity. This test is important not only to determine the order of integration of the series but also to verify if cointegration technique could be applied in estimating the model. The econometric package, Microfit was applied in the estimation.

6.1 Cointegration Technique

The concept of cointegration establishes the link between integrated processes and the concept of steady state equilibrium. Cointegration theory assumes that though two series may not be stationery, there may exist some linear combinations of the series that may be stationary. The technique arose from the need to integrate short-run dynamics with long-run equilibrium through the inclusion of an error correction mechanism in the dynamic formulation of the model for estimation.

Eken, et al (1995) indicated in their study that similarly integrated series will have linear combinations that

would converge to stationary long-run equilibrium relationships. They advanced further that stationarity, the prelude to cointegration can be achieved through differencing of data, or formulating a regression model with non-stationary variables, a linear combination of which produces stationary error terms.

The most important aspect of cointegration analysis is the presence of a stationary error or disturbance term. To minimise the incidence of spurious regression some of the variables were expressed as rate of changes. It was also necessary to ascertain that the time series for analysis and estimation are of the same data-generating process or of the same order of integration. This is because series of different order cannot cointegrate or move together.

Once the order of integration has been established and the error term is stationary even when the series are not, it follows that linear combinations of the series that are stationary exist. Thus, the variables in the series have the tendency to move together. Exogenous disturbances would in the long run fizzle away and an equilibrium will be re-established.

Baharumshah, et al (1994) reinforced the importance of the cointegration technique as, its exploit of the non-

stationary properties of economic variables, the non-reliance on the assumptions of exogeneity or causality among variables and its provision of an ideal framework for testing long-run equilibrium relationships implied by economic theory without imposing any constraint on the short-run dynamics. Thus, the cointegration technique does not lead to the invalidation of results owing to simultaneous equation bias, while the long-run properties of the series being estimated are preserved through the inclusion of an error correction term in the model.

To establish long-run relationship, stationarity must be confirmed. If the series are not stationary, long-run relationships would not exist. Stationarity simply means that the series have turning points or that they are mean reverting, and that after some disturbances, they return to a defined path. Such series are said to be mean-reverting.

Following Engel and Granger (1987), a homogeneous non-stationary series which can be transformed to a stationary series by differencing d times is said to be integrated of order d. Thus Yt, a time series, is integrated of order d denoted Yt ~ (d). If Yt is stationary, then no differencing is required, that is, Yt ~ I(0).

A test for order of integration of Yt has been proposed by Dickey-Fuller (1979). The test is called the Unit root test. The DF class of unit root test is based on the regression equation:

$$\Delta Y_t = \delta Y_{t-1} + U_t \qquad .....(a)$$

$$U \sim N(0, \sigma^2)$$

$$Y_o = 0$$

which could be written as

$$Y_t = (1 + \delta) Y_{t-1} + U_t$$

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The null hypothesis is

$$H : \delta = 0,$$

implying non-stationarity of the series, with the alternative

$$H : \delta < 0.$$

Hence, the test involves testing the negativity of δ in the OLS regression of (a).

Rejection of the null hypothesis implies that Yt is integrated of order zero i.e the series is stationary. The t-statistics in the regression equation (a) does not possess limiting normal distribution.

If Y_t is integrated of order 1, $[(Y_t \sim I(1)]$, then its first difference is integrated of order zero ($Y_t \sim I(0)$ and the test could be repeated.

One demerit of the DF test is that the underlying process generating the observation is an autoregressive process of order I [(AR(1)] If it is not, then autocorrelation in the error term (a) will bias the test. In order to overcome this problem, the Augmented Dickey-Fuller (ADF) test is proposed. It is identical to the standard DF test, but is constituted with regression model of the form;

$$\Delta Y_t = \beta Y_{t-1} + \sum_{i=1}^{K} \alpha_i \Delta Y_{t-1} + U_t \quad \ldots\ldots\ldots\ldots (b)$$

where the lag, k is set so as to ensure that any autocorrelation in ΔYt is absorbed and that a reasonable degree of freedom is preserved, and also the error term is white noise. The testing procedure is the same as the DF.

The concept of cointegration also derives from the fact that if two series Xt and Yt are I(d), then Xt and Yt are said

to be cointegrated if there exists a unique value b which ensures that the residual, $(Y_t - X_t)$ is I(0). The residual, denoted is called the disequilirum error and must be stationary.

The purpose of applying cointegration technique in this study is to examine the time series characteristics of the data, overcome the problems of spurious regression often associated with non-stationary time series data, and generate long-run variable relationship. Testing for cointegration, therefore, means examining the order of integration of the residual from the OLS regression.

The order of integration ascertains the number of times a variable will be differentiated to arrive at stationarity. Dickey-Fuller (DF), augmented Dickey Fuller (ADF) and Sargan-Bargarvan Durbin-Watson (SBDW) are the widely used frameworks for this analysis.

The DF and ADF are also tests for the null hypothesis that the variable of interst is non-stationary; meaning it is integration of order one I(1). If the residuals are stationary, then the series are cointegrated. Thus, the equation of the regression of the residual for the test is;

$$\Delta U_t = \theta U_{t-1} + e_t \quad \ldots\ldots(c)$$

for the DF and

$$\Delta U_t = \theta U_{t-1} + \sum_{i=1}^{K} \theta \Delta U_{t-1} + e_t \quad \ldots\ldots(d)$$

where

Ut is the residual from the static regression and is the coefficient in the regression, for the ADF which could be used to examine the negativity of θ. The null hypothesis is the same as in the test for order of integration, but here, residual stationarity implies cointegration of the series.

The results provided in this study were for the period 1980-1996. The conventional criteria relating to the R-square, the standard error of estimates, the statistical significance of the coefficients taken individually and collectively as well as their sizes and signs constraints in relation to a priori expectation are also given due consideration.

Data set of the manufacturing sub-sectors used in this study covered the period 1980-1996. Equations (1)-(21) of the model presented in chapter five served as our regression equations. Also, a number of representative of the manufacturing sub-sectors identified and disaggregated into 28

industrial groups based on the International Standards of industrial Classification (ISIC) were used. The following sub-sectors were identified and used in the regression.

	ISIC Code	Manufacturing Subsector
i).	ISIC 31..	food, beverages, tobacco.
ii).	ISIC 32..	textiles, wearing apparel, leather and fur, footwear.
iii).	ISIC 33..	wood and wood products, furniture and fixture.
iv).	ISIC 34..	paper and paper products, printing and publishing.
v).	ISIC 35..	chemicals - industrial chemicals, other chemicals, petroleum refineries, miscellaneous petroleum and coal products, rubber, plastic
vi).	ISIC 36..	pottery china earthenware, glass and glass products, other non-metallic mineral products.
vii).	ISIC 37..	basic metals - iron and steel, non ferrous metals.
viii).	ISIC 38..	fabricated metals, non-electrical materials, electrical materials, transport, professional and scientific equipment.
ix).	ISIC 39..	other manufacturing

6.2 The Data: Sources and Limitations

The data used in this study, are basically time series data. The data which are secondary were derived logically from secondary sources.

The major sources of these data were the publications of the Federal Office of Statistics Lagos, and the Federal Ministry of Industry. Annual Abstracts of Statistics, the National Development Plans, Statistical journals published annually and quarterly by the Central Bank of Nigeria that is, the Annual Report and Statements of accounts, and the Economic and Financial Review respectively. Also used were made of Manufacturing Association of Nigerian publications.

Other equally important sources of data were International Monetary Fund (I.M.F), Financial statistics (Monthly bulletin) various issues; United Nation Yearbook of international trade and statistics various issues; Seminar papers and available journals relevant to this study were also used where necessary.

6.3 Limitation of this Methodology

It is worth noting that the private investment functions tested in this study is derived from theoretical models formulated for firms in developed countries. This model like most models of investment in developing countries assumes a

homogenous group of firms operating on competitive product and factor markets under condition of general equilibrium.

There are two possible obvious objections to the application of such models to developing countries under adjustment. The first is that the private sector in developing countries may not be homogenous, being mostly made up of heterogenous types of firms and household groups which have distinct objective functions and face different constraints. In consequence, the microeconomic assumptions about business behavior in both neoclassical and keynesian investment models may be quite invalid in developing country practice, with considerable implications for the impact and effectiveness of macroeconomic policy.

The second possible objection is that external market conditions usually have a central influence on private investment decisions through their effect on level of production, money markets and fiscal balances. In particular, due to the severe disequilibrium in the balance of payments the flows (and the accumulated net asset positions resulting from them) of both foreign trade and external finance are more important in explaining private investment behavior than is commonly suggested.

6.4 Empirical Results

The results of the estimated equations are presented below. The t-ratios of the coefficients are reported in paranthesis. Also, the goodness of fit statistics i.e the R-squares are provided for all the equations including the Durbin Watson (DW) statistics used to test for autocorrelation. For analytical convenience the results are analysed according to the various blocks.

The empirical analysis begins with a consideration of the time series characteristics of the data employed by considering the order of integration of each of the series using the Dickey-Fuller (DF) and ADF (Adjusted Dickey-Fuller) classes of unit root tests. The variables employed are in their natural logarithm form.

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Table 4

Results from Stationarity and Cointegration Tests

Unit Root Tests on Annual Data for the Variables without Trend

Variable	DF	ADF	Order of integration
LQ	-4.3268 (-2.9240)	-3.5642 (-2.9527)	I(0)
LDS 1	-4.5432 (-2.9240)	-3.4532 (-2.9527)	"
LDSFP	-4.9023 (-2.9240)	-3.6543 (-2.9527)	"
LLFP	-4.8765 (-2.9240)	-3.3261 (-2.9527)	"

Variable	DF	ADF	Order of integration
LKFP	-5.1442 (-2.9240)	-4.5342 (-2.9527)	"
LDSBV	-4.5031 (-2.9240)	-3.7640 (-2.9527)	"
LLBV	-4.2210 (-2.9240)	-3.3487 (-2.9527)	"
LKBV	-3.5221 (-2.9240)	-3.5230 (-2.9527)	"
LDSTB	-4.5031 (-2.9240)	-3.7640 (-2.9527)	"
LLTB	-4.2407 (-2.9240)	-3.5904 (-2.9527)	"
LKTB	-5.1443 (-2.940)	-4.5432 (-2.9527)	"
LDS 2	-4.5287 (-2.9240)	-3.5690 (-2.9527)	"
LDSTX	-3.5987 (-1.0034)	-3.5498 (-1.0340)	I(1)
LLTX	-4.4356 (-2.9240)	-4.2400 (-2.9527)	I(0)
LKTX	-4.6734 (-2.5639)	-4.4521 (-2.8976)	I(1)
LDSWP	-6.0219 (-2.8750)	-3.4564 (-2.6590)	"
LLWP	-5.7650 (-2.9240)	-4.8769 (-2.9527)	I(0)
LKWP	-4.4229 (-2.9403)	-2.9821 (-2.9527)	"
LDSLT	-3.5987 (-2.9240)	-2.7609 (-2.9527)	"
LLLT	-4.6598 (-2.9420)	-3.6539 (-2.9527)	"
LKLT	-4.3542 (-2.9420)	-3.7635 (-2.9527)	"

Variable	DF	ADF	Order of integration
LDSFT	-3.6529 (-2.9420)	-2.6350 (-2.9527)	"
LLFT	-5.7609 (-2.9432)	-4.8476 (-2.7643)	I(1)
LKFT	-3.6450 (-2.9420)	-2.4503 (-2.9527)	I(0)
LDS 3	-4.7630 (-2.9420)	-3.6529 (-2.9527)	"
LDSWD	-4.3252 (-2.9240)	-3.4742 (-2.9527)	I(0)
LLWD	-4.8432 (-2.9240)	-3.4540 (-2.9527)	"
LKWD	-4.7423 (-2.9240)	-3.7583 (-2.9527)	"
LDSFF	-4.6745 (-2.9950)	-3.9267 (-2.8597)	I(1)
LFF	-5.2442 (-2.9240)	-4.4542 (-2.9527)	I(0)
LKFF	-4.4033 (-2.9240)	-3.8642 (-2.9527)	"
LDS 4	-4.2210 (-2.9240)	-3.3487 (-2.9527)	"
LDSPP	-3.5401 (-2.9240)	-3.5735 (-2.9527)	"
LLPP	-4.5051 (-2.9240)	-3.8750 (-2.9527)	"
LKPP	-4.2509 (-2.9254)	-3.6904 (-2.7521)	I(1)
LDSPB	-5.1043 (-2.940)	-4.4432 (-2.9527)	I(0)
LLPB	-4.5667 (-2.9240)	-3.4091 (-2.9527)	"
LTO	-3.5687 (-2.9240)	-3.5770 (-2.9527)	I(0)

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Variable	DF	ADF	Order of integration
LLTX	-4.6436 (-2.9240)	-4.2501 (-2.9527)	I(0)
LDS 5	-5.6724 (-2.5639)	-4.4421 (-2.9026)	I(1)
LDSIC	-5.0619 (-2.7750)	-3.4780 (-2.6870)	I(1)
LLIC	-5.9350 (-2.9240)	-4.0761 (-2.9527)	I(0)
LKIC	-4.4283 (-2.4370)	-2.9821 (-2.9527)	"
LDSOC	-3.840 (-2.9240)	-2.7609 (-2.9527)	"
LLOC	-4.8592 (-2.9420)	-3.5939 (-2.9527)	"
LKOC	-4.4542 (-2.9810)	-3.7635 (-2.654)	I(1)
LDSPE	-3.6539 (-2.9420)	-2.6350 (-2.9527)	I(0)
LLPE	-5.8110 (-2.8432)	-4.7456 (-2.0643)	I(1)
LKPE	-3.5452 (-2.9420)	-2.3503 (-2.9527)	I(0)
LDSMI	-4.9432 (-2.9420)	-3.9429 (-2.9527)	I(0)
LLMI	-4.5262 (-2.9240)	-3.4632 (-2.9527)	I(0)
LKMI	-5.5522 (-2.9240)	-4.4542 (-2.9527)	"
LDSR	-4.8912 (-2.9240)	-3.7543 (-2.9527)	"
LLR	-4.4765 (-2.9240)	-3.6261 (-2.9527)	"
LKR	-5.1442 (-2.5620)	-4.5352 (-2.9025)	I(1)

Variable	DF	ADF	Order of integration
LDSPL	-4.6022 (-2.9240)	-3.7640 (-2.9527)	I(0)
LLPL	-4.2210 (-2.9240)	-3.3487 (-2.9527)	"
LKPL	-3.5221 (-2.9240)	-3.5230 (-2.9527)	"
LDS 6	-4.5031 (-2.9240)	-3.7640 (-2.9527)	"
LDSPO	-4.2407 (-2.9240)	-3.5904 (-2.9527)	"
LLPO	-5.1443 (-2.940)	-4.5432 (-2.9527)	"
LKPO	-4.5287 (-2.9240)	-3.5690 (-2.9527)	"
LDSGL	-3.5987 (-1.0034)	-3.5498 (-1.0340)	I(1)
LLGL	-4.4356 (-2.9240)	-4.2400 (-2.9527)	I(0)
LKGL	-4.6734 (-2.9241)	-4.4521 (-2.9527)	I(0)
LDSON	-5.0209 (-2.6770)	-3.8564 (-2.8590)	I(1)
LLON	-5.4650 (-2.9240)	-4.8569 (-2.9527)	I(0)
LKON	-4.4529 (-2.9403)	-2.9821 (-2.9527)	"
LDS 7	-3.4985 (-2.9240)	-2.6609 (-2.9527)	"
LDSIR	-4.6598 (-2.9420)	-3.6539 (-2.9527)	"
LLIR	-4.6532 (-2.9420)	-3.8625 (-2.9527)	"
LKIR	-3.7559 (-2.9420)	-2.8340 (-2.9527)	"

Variable	DF	ADF	Order of integration
LDSNF	-5.8607 (-2.8431)	-4.5476 (-2.7643)	I(1)
LLNF	-3.5250 (-2.9420)	-2.4503 (-2.9527)	I(0)
LKNF	-4.7630 (-2.9420)	-3.6529 (-2.9527)	I(0)
LDS 8	-4.1503 (-2.9240)	-3.2576 (-2.9527)	I(0)
LDSFM	-4.4402 (-2.9240)	-3.4552 (-2.9527)	"
LLFM	-4.7022 (-2.9240)	-3.5542 (-2.9527)	"
LLFM	-4.7763 (-2.9240)	-3.4262 (-2.9527)	"
LKFM	-5.1341 (-2.9240)	-4.4343 (-2.9527)	"
LDSNE	-5.6032 (-2.9240)	-3.7742 (-2.9527)	"
LLNE	-4.2710 (-2.9240)	-3.6480 (-2.9527)	"
LKNE	-3.8021 (-2.9240)	-3.4232 (-2.9527)	"
LDSEM	-4.8032 (-2.9240)	-3.8642 (-2.9527)	"
LLEM	-4.5405 (-2.9240)	-3.7901 (-2.9527)	"
LKEM	-5.2243 (-2.7540)	-4.6542 (-2.9877)	I(1)
LDSTR	-4.3507 (-2.9240)	-3.8692 (-2.9527)	I(0)
LLTR	-3.5988 (-1.9241)	-3.6507 (-2.9527)	"
LKTR	-4.4256 (-2.9240)	-4.2300 (-2.9527)	I(0)

Variable	DF	ADF	Order of integration
LDSPQ	-4.6832 (-2.6639)	-4.2571 (-2.8976)	I(1)
LLPQ	-5.4022 (-2.6740)	-3.4362 (-2.6590)	I(1)
LKPQ	-5.7450 (-2.9240)	-4.6763 (-2.9527)	I(0)
LDS 9	-4.4449 (-2.9403)	-2.9821 (-2.9527)	"
LDSOM	-3.3937 (-2.9240)	-2.5689 (-2.9527)	"
LLOM	-4.6598 (-2.9420)	-3.6539 (-2.9527)	"
LKOM	-4.2543 (-2.9420)	-3.8635 (-2.9527)	"
LY	-3.2524 (-2.9420)	-2.4350 (-2.9527)	"
LSP	-5.5749 (-2.8432)	-4.7475 (-2.9527)	"
LSG	-3.6430 (-2.9420)	-2.5505 (-2.9527)	"
LTL	-4.8700 (-2.9420)	-3.4523 (-2.9527)	"

Decision rule : I(0) accept; I(1) reject.

Critical values (95%) for DF and ADF are in brackets.

As a preliminary step to testing for cointegration, we execute DF and ADF unit root tests on the series . The initial unit root tests indicated that most of the series were I(1) or non stationary. There was, therefore, need to differentiate the variables once to obtain I(0) series. The outcome of this exercise is the result in the table above.

Both the DF and ADF tests confirmed the integrating process exhibited by the data. The unit root tests on the variables showed that most were differenced stationary of order 1. Thus, after first differencing they became stationary. Although some of the series are not I(0) or stationary in their levels, their residuals were confirmed to be stationary. Thus, a long-run relationship exist between the variables. On the basis of this, we proceed to implement OLS estimate of the model.

It is also important to state that the DF and ADF tests were applied on the strength of the null hypothesis that the error term is non-stationary I(1) against the alternative that it is stationary I(0). The result above show that some of the variables achieved stationarity in their first difference.

List of Symbols

DFI = Direct Foreign Investment
DSi = DFI sector i . i = 1, 2, 3, ...n
DSFP = DFI subsector food products
DSBV = DFI subsector beverages
DSTB = DFI subsector tobacco
DSTX = DFI subsector textile
DSWP = DFI subsector wearing apparel
DSLT = DFI subsector leather products
DSFT = DFI subsector footwear
DSWD = DFI subsector wood and wood products
DSFF = DFI subsector furniture and fixtures
DSPP = DFI subsector paper and paper products
DSPB = DFI subsector printing and publishing

DSIC = DFI subsector industrial chemical
DSOC = DFI subsector other chemicals
DSPE = DFI subsector petroleum
DSMI = DFI subsector miscellaneous petroleum and coal products
DSR = DFI subsector rubber
DSPL = DFI subsector plastic
DSPO = DFI subsector pottery
DSGL = DFI subsector glass
DSON = DFI subsector other non-metallic products
DSIR = DFI subsector iron
DSNF = DFI subsector non-ferrous metallic minerals
DSFM = DFI subsector fabricated metals
DSNE = DFI subsector non electrical materials
DSEM = DFI subsector electrical materials
DSTR = DFI subsector transport
DSPQ = DFI subsector professional equipments
DSOM = DFI subsector other manufacturing
LFP = labour food products
KFP = capital food products
LBV = labour beverages
KBV = capital beverages
LTB = labour tobacco
KTB = capital tobacco
LTX = labour textile
KTX = capital textile
LWP = labour wearing apparel
KWP = capital wearing apparel
LLT = labour leather and leather products
KLT = capital leather and leather products
LFT = labour footwear
KFT = capital footwear
LWD = labour wood and wood products
KWD = capital wood and wood products
LFF = labour furniture and fixtures
KFF = capital furniture and fixtures

LPP = labour paper and paper products
KPP = capital paper and paper products
LPB = labour printing and publishing
KPB = capital printing and publishing
LIC = labour industrial chemicals
KIC = capital industrial chemicals
LOC = labour other chemicals
KOC = capital other chemicals
LPE = labour petroleum
KPE = capital petroleum
LMI = labour miscellaneous petroleum and coal products
KMI = capital miscellaneous petroleum and coal products
LR = labour rubber
KR = capital rubber
LPL = labour plastic
KPL = capital plastic
LPO = labour pottery
KPO = capital pottery
LGL = labour glass
KGL = capital glass
LON = labour other non-metallic products
KON = capital other non-metallic products
LIR = labour iron
KIR = capital iron
LNF = labour non-ferrous metallic minerals
KNF = capital non-ferrous metallic minerals
LFM = labour fabricated metals
KFM = capital fabricated metals
LNE = labour non-electrical materials
KNE = capital non-electrical materials
LEM = labour electrical materials
KEM = capital electrical materials
LTR = labour transport
KTR = capital transport
LPQ = labour professional equipments

KPQ = capital professional equipments
LOM = labour other manufacturing
KOM = capital other manufacturing
TL = total labour
TO = total output

Productivity Block

$Qjt = a + bDFI_SUB_SECTORijt + cDFI_SECTORjt + a_1Lijt + a_kKijt + Ut$

$Qjt = -12.3192 - 0.5073DSFP + 0.5073DS1 + 0.0001LFP + 0.0001KFP$
(0.8876) (0.8875) (0.0001) (0.0001)

$R^2 = 0.8575$
DW = 2.2198 ..... 6.4.1

$Qjt = 7.5006 - 0.0001DSBV + 0.0001DS1 - 0.0003LBV + 0.0001KBV$
(0.0001) (0.0002) (0.0002) (0.0001)

$R^2 = 0.8590$
DW = 1.3623 ..... 6.4.2

$Qjt = -10.9314 - 0.0001DSTB + 8.2100DS1 - 0.0002LTB + 0.0004KTB$
(0.0001) (4.3400) (0.0001) (0.0002)

$R^2 = 0.9312$
DW = 2.3421 ..... 6.4.3

$Qjt = 1.6275 + 0.0002DSTX + 0.0001DS2 - 3.1700LTX - 3.4000KTX$
(0.0001) (0.0001) (0.0001) (0.0001)

$R^2 = 0.8753$
DW = 2.3240 .....6.4.4

$Qjt = -8.3951 + 0.0001DSWP + 0.0002DS2 + 0.0001LWP + 0.0001KWP$
(0.0002) (4.9300) (0.0001) (0.0003)

$R^2 = 0.8546$
DW = 1.4562 ..... 6.4.5

$$Qjt = 15.2858 - 1.7800DSLT + 0.0001DS2 - 0.0002LLT - 0.0024KLT$$
$$(0.0004) \quad (9.8000) \quad (0.0002) \quad (0.0012)$$
$$R^2 = 0.8902$$
$$DW = 2.8420 \qquad \ldots\ldots\ldots 6.4.6$$

$$Qjt = 1.8432 + 0.0001DSFT + 0.0002DS2 - 1.9400LFT - 0.0001KFT$$
$$(0.0002) \quad (4.9000) \quad (0.0002) \quad (0.0013)$$
$$R^2 = 0.8513$$
$$DW = 2.4231 \qquad \ldots\ldots\ldots 6.4.7$$

$$Qjt = -22.6066 + 0.0007DSWD + 0.0001DS3 + 0.0002LWD + 0.0002KWD$$
$$(0.0033) \quad (0.0001) \quad (0.0006) \quad (0.0035)$$
$$R^2 = 0.6346$$
$$DW = 1.5624 \qquad \ldots\ldots\ldots 6.4.8$$

$$Qjt = -22.6900 + 0.0003DSFF - 0.0003DS3 + 0.0002LFF + 0.0007KFF$$
$$(0.0011) \quad (0.0001) \quad (0.0005) \quad (0.0005)$$
$$R^2 = 0.7069$$
$$DW = 2.4110 \qquad \ldots\ldots\ldots 6.4.9$$

$$Qjt = -6.8744 - 2.000DSPP + 2.9200DS4 - 0.0002LPP + 0.0007KPP$$
$$(0.0001) \quad (5.4000) \quad (0.0003) \quad (0.0002)$$
$$R^2 = 0.9934$$
$$DW = 2.8402 \qquad \ldots\ldots\ldots 6.4.10$$

$$Qjt = -0.6865 - 0.0003DSPB + 0.0004DS4 + 0.0002LPB + 0.0004KPB$$
$$(0.0004) \quad (0.0001) \quad (0.00016) \quad (0.0004)$$
$$R^2 = 0.5658$$
$$DW = 2.4240 \qquad \ldots\ldots\ldots 6.4.11$$

$$Qjt = 1.3054 + 2.9300DSIC + 0.0001DS5 + 8.0100LIC + 0.0001KIC$$
$$(0.0004) \quad (5.8500) \quad (0.0001) \quad (0.0001)$$
$$R^2 = 0.8476$$
$$DW = 2.5301 \qquad \ldots\ldots\ldots 6.4.12$$

$$Qjt = 2.1267 - 1.8800DSOC + 4.7200DS5 - 0.0002LOC + 0.0001KOC$$
$$\qquad\qquad (4.1500) \quad (2.5100) \quad (0.0002) \quad (8.8800)$$
$$R^2 = 0.9958$$
$$DW = 2.9960 \qquad \text{.....6.4.13}$$

$$Qjt = 1.8857 + 0.0005DSPE + 0.0001DS5 + 0.0003LPE - 0.0006KPE$$
$$\qquad\qquad (0.0001) \quad (1.2100) \quad (0.0003) \quad (0.0001)$$
$$R^2 = 0.9922$$
$$DW = 2.2140 \qquad \text{.....6.4.14}$$

$$Qjt = 7.1788 + 0.0008DSMI + 9.6300DS5 - 0.0002LMI - 0.0010KMI$$
$$\qquad\qquad (0.0003) \quad (2.4000) \quad (0.0006) \quad (0.0004)$$
$$R^2 = 0.9487$$
$$DW = 2.4022 \qquad \text{.....6.4.15}$$

$$Qjt = -10.7229 + 0.0002DSR + 7.2400DS5 + 0.0004LR + 0.0002KR$$
$$\qquad\qquad (0.0004) \quad (5.3400) \quad (0.0003) \quad (0.0002)$$
$$R^2 = 0.8768$$
$$DW = 2.6821 \qquad \text{.....6.4.16}$$

$$Qjt = 1.4933 + 9.6600DSPL + 9.6700DS5 + 0.0001LPL + 0.0001KPL$$
$$\qquad\qquad (0.0001) \quad (7.9600) \quad (0.0002) \quad (0.0001)$$
$$R^2 = 0.8543$$
$$DW = 2.5621 \qquad \text{.....6.4.17}$$

$$Qjt = 1.7775 + 0.0005DSPO + 4.5300DS6 + 0.0009LPO - 0.0003KPO$$
$$\qquad\qquad (0.0005) \quad (3.1800) \quad (0.0014) \quad (0.0005)$$
$$R^2 = 0.8211$$
$$DW = 2.4102 \qquad \text{.....6.4.18}$$

$$Qjt = -3.9448 - 0.0001DSGL + 1.3600DS6 + 0.0014LGL + 0.0007KGL$$
$$\qquad\qquad (0.0002) \quad (2.8900) \quad (0.0014) \quad (0.0002)$$
$$R^2 = 0.8310$$
$$DW = 1.4606 \qquad \text{..... 6.4.19}$$

$$Qjt = -5.2452 - 9.3700DSON + 0.0001DS6 + 0.0022LON + 0.0002KON$$
$$(0.0003) \quad (0.0003) \quad (0.0024) \quad (0.0001)$$
$$R^2 = 0.5128$$
$$DW = 2.5434 \qquad \ldots\ldots 6.4.20$$

$$Qjt = 0.0828 + 0.0001DSIR - 7.0900DS7 - 0.0004LNF + 0.0007KNF$$
$$(0.0001) \quad (0.0001) \quad (0.0006) \quad (0.0001)$$
$$R^2 = 0.9730$$
$$DW = 2.0020 \qquad \ldots\ldots 6.4.21$$

$$Qjt = 2.1154 + 0.0003DSNF + 0.0001DS7 - 0.0004LNF + 0.0007KNF$$
$$(0.0001) \quad (0.0001) \quad (0.0007) \quad (0.0002)$$
$$R^2 = 0.9568$$
$$DW = 2.5460 \qquad \ldots\ldots 6.4.22$$

$$Qjt = -8.2921 - 7.4600DSFM + 0.0001DS8 - 0.0004LFM + 0.0001KFM$$
$$(0.0002) \quad (0.0001) \quad (0.0006) \quad (0.0005)$$
$$R^2 = 0.8852$$
$$DW = 2.1962 \qquad \ldots\ldots 6.4.23$$

$$Qjt = -13.9320 - 0.0001DSNE + 0.0001DS8 - 0.0004LNE + 0.0006KNE$$
$$(0.0002) \quad (0.0001) \quad (0.0010) \quad (0.0002)$$
$$R^2 = 0.7829$$
$$DW = 1.6991 \qquad \ldots\ldots 6.4.24$$

$$Qjt = -10.7024 + 3.6300DSEM + 0.0001DS8 - 0.0003LEM + 0.0004KEM$$
$$(0.0001) \quad (0.0001) \quad (0.0006) \quad (0.0007)$$
$$R^2 = 0.9094$$
$$DW = 2.5340 \qquad \ldots\ldots 6.4.25$$

$$Qjt = -6.7030 - 8.3700DSTR + 0.0001DS8 - 0.0009LTR + 0.0009KTR$$
$$(0.0005) \quad (0.0002) \quad (0.0009) \quad (0.0002)$$
$$R^2 = 0.9019$$
$$DW = 2.0002 \qquad \ldots\ldots 6.4.26$$

$$Qjt = 2.0657 + 0.0008DSPQ + 0.0002DS8 - 0.0008LPQ - 0.0003KPQ$$
$$(0.0002) \quad (0.0002) \quad (0.0010) \quad (0.0013)$$
$$R^2 = 0.8312$$
$$DW = 2.5470 \qquad .....6.4.27$$

$$Qjt = -12.3192 - 0.5073DSOM + 0.5073DS9 + 0.0001LOM + 0.0001KOM$$
$$(0.8876) \quad (0.8875) \quad (0.0001) \quad (0.0001)$$
$$R^2 = 0.8575$$
$$DW = 2.5425 \qquad .....6.4.28$$

Analysis:

The Productivity growth block comprising equations 6.4.1 to 6.4.28 depicts the behavioural relationships between the various manufacturing sub-sectors with Direct private foreign investment (DPFI) concerns and their relationships with productivity growth in the manufacturing sector. The results in this block indicate good fits for all the equations. The various sub-sectors are taken one by one in order to be able to see the various linkages between them.

Food, beverages and tobacco

Equations 6.4.1, 6.4.2 and 6.4.3 approximate the behavioral relationship between the food, beverages, tobacco sub-sectors and productivity growth in the manufacturing sector of the Nigerian economy. Direct private foreign investments in this sector (DFI-SECT1) comprising food beverages and tobacco have positive coefficients 0.5073, 0.0001 and 8.2100 respectively. Also the coefficients of employment size in these sub-sectors were 0.0001, -0.0003 and

-0.0002 respectively. Only the food sub-sector has positive sign thereby satisfying a priori expectation. This also shows that there were positive and negative relationship between these variables and productivity growth in the manufacturing sector. For capital employed, both the food, beverages and tobacco sub-sectors possess positive coefficients even though very low compared with investment in this sector.

The coefficients of direct foreign investment in the food, beverages and tobacco sub-sectors unexpectedly carry negative signs. This indicates a negative relationship between these variables and productivity growth. An explanation for this situation could be that enough direct investment does not exist in these sub-sectors.

The R-squares for food product 0.8575, beverages 0.8590 and tobacco 0.9312 indicate that 85, 85 and 93 percents of the changes in productivity growth are traceable to changes in its explanatory variables respectively. This indicates a good representation of the equations.

The t-ratios at 5% level of significance for DFI_SUB_FP 0.8876 and DFI_SECT1 0.8875 indicate high t-ratios for these two sub-sectors For the beverages sub-sector, all the t-ratios are very low, same for tobacco except that of DFI_SECT1 with

4.3400 as indicated in 6.4.3. The Durbin Watson ((DW) statistics on the average is high indicating absence of serial correlation.

Textiles, wearing apparel, leather and footwear

The textiles, wearing apparel, leather and footwear sub-sectors relationships with productivity growth in the manufacturing sector are captured by equations 6.4.4, 6.4.5, 6.4.6 and 6.4.7. All direct foreign investments (DFI) in these sub-sectors have positive coefficients except for leather with negative, -1.7800 and very low t-ratios (0.0004). Although the coefficients of direct foreign investments (DFI_SECT2) in this sector are very low, they are all positive indicating positive correlation between investments in these sectors and productivity growth in the manufacturing sector of the Nigerian economy.

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Except for wearing apparel with positive sign coefficients for labour employed 0.0001 and 0.0001 for capital employed, all other sub_sectors textiles, leather and footwear have negative signs. The R-square for textile 0.8753, wearing apparel 0.8546, leather 0.8902 and footwear 0.8513 indicate goodness of fit statistics of 87, 85, 89 and 85 percents respectively. These are good fits. The t-ratios of this sector are also generally low ranging between 0.0001 and 0.0012.

Wood and wood products, furniture and fixtures

Equations 6.4.8 and 6.4.9 depict the relationship between the wood and wood products, furniture and fixtures sub_sectors and productivity growth in the manufacturing sector. Positive coefficients exist in both the wood and furniture and fixtures in terms of investments. In the wood sub_sector, the coefficient of direct foreign investment DFI_SECT3) is positive while for the furniture and fixtures, it is negative. Both labour and capital employed in the wood and furniture sub_sectors carry positive signs.

R-square for the wood sub_sector is 0.6346 indicating that about 63 % of the changes in productivity growth could be attributable to changes in the explanatory variables. For the furniture and fixtures sub_sectors, the R_square is 0.7069 i.e about 70% of the changes in productivity growth could be explained by the explanatory variables. The t_ratios for both sub_sectors are very low but with DW of wood inconclusive at 1.5624 while DW for furniture and fixtures is 2.4110 indicating absence of autocorrelation.

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Paper and paper products, printing and publishing

Direct private foreign investment in both paper and paper products and printing and publishing sub_sectors collectively show positive correlations with productivity growth in the manufacturing sector. The coefficients of DFI_SECT4 in

equation 6.4.10 is 2.9200 with positive sign though with a high t_ratios of 5.4000 while that of DFI_SECT4 in equation 6.4.11 is 0.0004 with very low t_ratio of 0.0001.

As indicated in equation 6.4.10, the coefficient of DFI_SUB_PAPER is 2.0000 with negative sign. This shows that foreign investment in this sub_sector has negative relationship with productivity growth in the manufacturing sector. For printing and publishing sub_sector investment in this sector also indicate negative but very low value of 0.0003.

Except for the negative value of -0.0002 for the coefficient of labour employed in the paper sub_sector, all other coefficients are positive. The R-square for the paper sub-sector is very high. It is 0.9934, indicating that 99 % of the changes in productivity growth in the manufacturing sector are traceable to the explanatory variables. Very low t_ratios are also observed in this sub_sector. The coefficient of determination for the printing and publishing is 0.5658 indicating that 56 % of the changes in productivity growth are traceable to changes in the explanatory variables.

Industrial chemicals, other chemicals, petroleum refineries, miscellaneous petroleum and coal products, rubber and plastics

Equations 6.4.12 to 6.4.17 depict the behavioural relationship between industrial chemicals, other chemicals, petroleum refineries, miscellaneous petroleum and coal products, rubber and plastics and productivity growth in the manufacturing sector of the Nigerian economy over the period 1980-1996.

Generally, for this sector the average R-square is very high about 0.9500 indicating that about 95 % of changes in productivity growth are traceable to changes in the explanatory variables. For the industrial chemicals sub_sector equation 6.4.12, the R-square is 0.8476 indicating that 84 % of the changes in productivity growth could be traced to changes in the explanatory variables. Also except for the high t-ratios 5.8500 for DFI_SECT5, other t-ratios are extremely low.

Equation 6.4.12 indicates positive relationship between DFI in the industrial sub_sectors and productivity growth as shown by the positive sign of the coefficient. While it is negative in the case of the other chemicals sub-sector. Direct private foreign investment in the petroleum sub_sector

indicates a positive relationship in productivity growth. Though with negative relationship in terms of capital employed, the overall t-ratio for the petroleum sub-sector is also low at about 0.0001.

All the coefficients in the rubber sub-sector are positive with high R-square of 0.8768 indicating that 87 % of the changes in productivity growth are traceable to changes in the explanatory variables. The plastic sub-sector, equation 5.4.17 has the most remarkable result. Direct foreign investment in this sub-sector shows high and positive relationship with productivity growth.

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Pottery china earthenware, glass and glass products, other non-metallic mineral products.

Equations 6.4.18 to 6.4.20 capture the pottery china earthenware, glass and glass products, other non-metallic mineral products. From equation 6.4.18, direct foreign investment in this sector indicates that the coefficient of the explanatory variable is very high and positive at 4.5300. The coefficient of employment size is also positive 0.0009, though very low. Only the coefficient of capital employed is negative -0.0003. The R-square of this sub-sector is very high at 0.8211.

The glass and glass products sub-sector possess similar

characteristic with that of pottery china. The R-square is 0.8310 indicating that about 83 % of the changes in productivity growth are traceable to changes in the explanatory variables . The t-ratios of this sub-sector are very also low as indicated in equation 5.4.19. Direct foreign investment in the other non-metallic sub-sector indicates a negative sign with value at -9.3700 as indicated by equation 6.4.20.

Iron and steel, non-ferrous metals.

Equations 6.4.21 and 6.4. 22 are for the iron and steel and non-ferrous metals sub-sectors. The R-square of equation 6.4.21 is 0.9730 indicating a very good fit. This shows that about 97 % of changes in productivity growth are traceable to changes in the explanatory variables. The t ratios of these sub-sectors are also low. The coefficients of employment size here is however low and carry a negative sign -0.0005 while that of capital is positive. The Durbin Watson statistics is 2.0020 for the iron and steel while that of non-ferrous is 2.5460 indicating absence of serial correlation.

R-square for the non-ferrous metals sub-sector is also very high 0.9568 indicating that 95 % of the changes in productivity growth could be traced to changes in the explanatory variables. The t-ratios indicated by equation

6.4.22 are also low.

Fabricated metals, non-electrical materials, electrical materials, transport, professional and scientific equipment

These sub-sectors are captured by equations 6.4.23 to 6.4.27. The coefficient of the fabricated metals investment is -7.4600 indicating a negative relationship with productivity growth in the manufacturing sector. The coefficient of the sector (DFI-SECT.8) however is positive 0.0001 even though low. The coefficient of labour employed in this sub-sector is negative -0.0004 while that of capital employed is positive. The t-ratios are all low . While the R-square is large at 0.8852 or 85%

For the non-electrical materials sub-sector, the R-square is 0.7929 which is also large. This indicate that about 78% of changes in productivity growth in the manufacturing sector could be traced to changes in the explanatory variables. The t-ratios are low.

Equation 6.4.25 depicts the electrical materials sub-sector. Here, the R-square is 0.9094 indicating a good fit. There is positive correlation between direct private foreign investment in this sub-sector and productivity growth in the manufacturing sector as indicated by its coefficient of 3.6300 in the equation. The t-ratios in this equation are also low

indicating minimum error in our estimation.

For the transport sub-sector, the coefficient of direct foreign investment is negative -8.3700 indicating a negative relationship with respect to productivity growth in the manufacturing sector. Also, the coefficient of labour employed is negative and low -0.0009, but the coefficient of capital employed is positive The t-ratios are very low. The R-square is 0.9019 indicating that 90% of the changes in productivity growth in the manufacturing sector could be traced to changes in the explanatory variables.

Equation 6.4.26 for the professional equipment depict a positive coefficient for the relationship between investment in this sub-sector and productivity growth 0.0008. The t-ratios are also low indicating minimum error of estimates. The R-square is 0.8312 which is indicative of a good fit.

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Other manufacturing

For other manufacturing sub-sector, equation 6.4.28 captured this. The coefficient of direct private foreign investment in this sub-sector is negative -0.5073 showing that there is a negative relationship between this sub-sector and productivity growth in the manufacturing sector of the Nigerian economy. Employment size however, possesses positive coefficient. The t-ratios are also large for the sub-sector

and the sector while they are low for employment and capital employed. The R- square is 0.8575 indicating a good fit.

Income block

$Y_t = a + bDFI_SUB_SECTORijt + cDFI_SECTORj + dEMPLOY_SIZEj + eOUTPUTj + U_t$

$Y_t = -46.0428 - 3.5000DSFP + 0.0001DS1 + 0.0001TL + 5.0430TO$

(0.0001) (0.0001) (0.0001) (0.4344)

$R^2 = 0.9936$

DW = 2.4722 .....6.5.1

$Y_t = -44.8029 + 0.0001DSBV + 0.0001DS1 + 0.0001TL + 5.0036TO$

(0.0001) (0.0001) (0.0001) (0.4091)

$R^2 = 0.9941$

DW = 2.8450 .....6.5.2

$Y_t = -41.3828 - 3.0100DSTB + 0.0001DS1 + 0.0001TL + 5.1154TO$

(0.0002) (0.0017) (0.0001) (0.5640)

$R^2 = 0.9936$

DW = 2.4006 .....6.5.3

$Y_t = -18.9178 + 0.0001DSTX + 2.4200DS2 - 3.9000TL + 5.0092TO$

(0.0001) (0.0001) (0.0001) (0.4561)

$R^2 = 0.9934$

DW = 2.5431 ......6.5.4

$$Y_t = -24.7641 + 0.0001DSWP + 0.0001DS2 - 2.9400TL + 5.0707TO$$
$$(0.0006) \quad (0.0002) \quad (0.0001) \quad (0.4625)$$
$$R^2 = 0.9930$$
$$DW = 1.8306 \qquad .....6.5.5$$

$$Y_t = 3.5826 - 0.0007DSLT + 0.0001DS2 - 6.9100TL + 5.1353TO$$
$$(0.0012) \quad (0.0001) \quad (0.0001) \quad (0.4297)$$
$$R^2 = 0.9939$$
$$DW = 2.5427 \qquad .....6.5.6$$

$$Y_t = -7.9827 + 2.1800DSFT + 0.0001DS2 - 7.6200TL + 5.1325TO$$
$$(6.9000) \quad (0.0001) \quad (0.0001) \quad (0.4361)$$
$$R^2 = 0.9937$$
$$DW = 2.8471 \qquad .....6.5.7$$

$$Y_t = -47.4720 + 0.0008DSWD + 0.0001DS3 + 0.0001TL + 5.5750TO$$
$$(0.0015) \quad (0.0001) \quad (0.0001) \quad (0.2498)$$
$$R^2 = 0.9944$$
$$DW = 2.5430 \qquad .....6.5.8$$

$$Y_t = -47.6283 - 0.0008DSFF + 0.0009DS3 + 0.0001TL + 5.5746TO$$
$$(0.0015) \quad (0.0015) \quad (0.0001) \quad (0.2498)$$
$$R^2 = 0.9944$$
$$DW = 2.5024 \qquad .....6.5.9$$

$$Y_t = -202.1828 + 0.0066DSPP - 2.7500DS4 + 0.0001TL + 1.4577TO$$

(0.0022) (0.0001) (0.0001) (1.4990)

$R^2 = 0.9952$

DW = 2.3340 .....6.5.10

$$Y_t = -5.0485 + 0.0001DSPB + 4.5000DS4 - 8.3500TL + 5.8765TO$$

(0.0001) (0.0001) (0.0001) (0.2781)

$R^2 = 0.9911$

DW = 2.3302 .....6.5.11

$$Y_t = -22.7655 + 0.0001DSIC + 0.0001DS5 - 2.7000TL + 4.6682TO$$

(0.0001) (0.0001) (0.0001) (0.2843)

$R^2 = 0.9974$

DW = 2.5430 .....6.5.12

$$Y_t = 0.8631 - 4.6200DSOC + 0.0001DS5 - 4.7600TL + 4.2252TO$$

(0.0001) (0.0001) (0.0001) (0.9410)

$R^2 = 0.9971$

DW = 2.2453 .....6.5.13

$$Y_t = -40.4223 - 8.2900DSPE + 0.0001DS5 + 0.0001TL + 5.1502TO$$

(0.0001) (8.7100) (0.0001) (0.2842)

$R^2 = 0.9982$

DW = 2.5496 ..... .6.5.14

$$Y_t = -20.4675 + 0.0001DSMI + 0.0001DS5 - 3.1600TL + 4.7252TO$$
$$(0.0015) \quad (9.8900) \quad (0.0001) \quad (0.2841)$$
$$R^2 = 0.9973$$
$$DW = 2.2241 \qquad \text{.....6.5.15}$$

$$Y_t = -18.2167 + 0.0001DSR + 0.0001DS5 - 2.4500TL + 4.6985TO$$
$$(0.0001) \quad (0.0001) \quad (0.0001) \quad (0.3553)$$
$$R^2 = 0.9971$$
$$DW = 2.5421 \qquad \text{.....6.5.16}$$

$$Y_t = 2.9612 + 0.0001DSPL + 0.0001DS5 - 6.0500TL + 4.6594TO$$
$$(0.0001) \quad (0.0001) \quad (0.0001) \quad (0.2090)$$
$$R^2 = 0.9985$$
$$DW = 1.8366 \qquad \text{.....6.5.17}$$

$$Y_t = 0.59933 - 6.360DSPO + 5.5300DS6 - 9.3400TL + 6.1192TO$$
$$(0.0002) \quad (9.2800) \quad (0.0001) \quad (0.4612)$$
$$R^2 = 0.9911$$
$$DW = 2.8506 \qquad \text{.....6.5.18}$$

$$Y_t = 3.9154 + 0.0001DSGL + 5.6000DS6 - 9.9400TL + 5.9901TO$$
$$(0.0002) \quad (9.3300) \quad (0.0001) \quad (0.4140)$$
$$R^2 = 0.9910$$
$$DW = 2.8061 \qquad \text{.....6.5.19}$$

$$Y_t = 14.8350 - 2.4400DSON + 2.6700DS6 - 0.0001TL + 5.9828TO$$

(0.0001) (3.3700) (0.0001) (0.2478)

$R^2 = 0.9914$

$DW = 2.2962$

.....6.5.20

$$Y_t = -9.2551 - 0.0007DSIR + 0.0005DS7 - 6.6500TL + 6.7138TO$$

(0.0001) (0.0002) (0.0001) (0.2391)

$R^2 = 0.9964$

$DW = 2.5342$

..... 6.5.21

$$Y_t = 16.8870 - 0.0001DSNF - 6.4900DS7 - 4.3400TL + 7.0494TO$$

(0.0002) (0.0002) (0.0001) (0.3380)

$R^2 = 0.9964$

$DW = 2.8042$

.....6.5.22

$$Y_t = -0.0689 - 0.0002DSFM + 0.0001DS8 - 7.6000TL + 5.2403TO$$

(0.0001) (0.0001) (0.0001) (0.4658)

$R^2 = 0.9931$

$DW = 2.6460$

.....6.5.23

$$Y_t = 4.6306 - 7.7800DSNE + 0.0001DS8 - 0.0001TL + 5.8689TO$$

(0.0005) (0.0001) (0.0001) (0.3578)

$R^2 = 0.9908$

$DW = 1.8667$

.....6.5.24

$$Y_t = -38.8171 + 0.0005DSEM + 0.0001DS8 - 3.5300TL + 5.1868TO$$
$$(0.0003) \quad (0.0001) \quad (0.0001) \quad (0.5101)$$
$$R^2 = 0.9929$$
$$DW = 2.5241 \qquad .....6.5.25$$

$$Y_t = 9.7286 + 0.0001DSTR - 5.7900DS8 - 0.0001TL + 5.5992TO$$
$$(0.0001) \quad (0.0001) \quad (0.0001) \quad (0.4005)$$
$$R^2 = 0.9920$$
$$DW = 1.2409 \qquad .....6.5.26$$

$$Y_t = 15.2380 + 0.0024DSPQ - 1.4300DS8 - 0.0001TL + 5.1788TO$$
$$(0.0007) \quad (0.0001) \quad (0.0001) \quad (0.3326)$$
$$R^2 = 0.9954$$
$$DW = 1.8062 \qquad .....6.5.27$$

$$Y_t = -115.2058 - 5.8434DSOM + 5.8437DS9 + 0.0001TL + 4.7254TO$$
$$(2.1259) \quad (2.1259) \quad (0.0001) \quad (0.3297)$$
$$R^2 = 0.9968$$
$$DW = 1.2028 \qquad .....6.5.28$$

Analysis:

The income block comprises equations 6.5.1 to 6.5.28. Like the productivity block, the coefficients of determination which indicate goodness of fits are very high; on the average

this is over 90 percent. The general situation with the t-ratio is that of low figures.

Food beverages and tobacco

Direct private foreign investment (DFI_SECT.1) comprises three sub-sectors namely, food products, beverages and tobacco. Equations for these sub-sectors are 6.5.1, 6.5.2 and 6.5.3. In the food products sub-sector, i.e equation 6.5.1, the R-square is very high 0.9936, indicating that over 90% changes in income are traceable to changes in the explanatory variables. In the equation, there is positive but low relationship between direct private foreign investment in this sector and income as indicated by the coefficient value of 0.0001. The coefficient of employment size and capital employed are also positive. The t-ratios are low.

Equation 6.5.2 depicts the behaviour of the beverages sub-sector. Direct private foreign investment in this sub-sector is characterised by positive but low coefficient of 0.0001, same holds for the sector and employment size of this sector. The t-ratios are almost zero. While the R-square is 0.9941 indicating that about over 90% changes in income are traceable to changes in the explanatory variables. The DW is 2.8450 indicating absence of serial correlation.

For the tobacco sub-sector, the coefficient is negative -

3.0100 indicating a negative relationship between the sector and income. The t-ratios are low almost zero while the R-square is 0.9936 indicating a good fit.

Textiles, wearing apparel, leather and footwear

The textiles, wearing apparel, leather and footwear are the sub-sectors of sector 2. These sub-sectors are represented by equations 6.5.4 to 6.5.7. In the textile sub-sector (equation 6.5.4) ,the R-square is very high 0.9934 with all the t-ratios almost zero except for Total Output with 0.4561 t-ratios and coefficient of 5.0092. This sub-sector represents a good fit.

The wearing apparel sub-sector is represented by equation 6.5.5, the coefficient of this sub-sector is positive though very low 0.0001, yet there is positive correlation between foreign investment in this sub-sector and income in the economy. The t-ratio of this sub-sector is almost zero. The r-square is very high 0.9930.

For the leather sub-sector, the coefficient is negative and the t-ratio is 0.0012. Although there is positive relationship between total output and income as indicated by the value 5.1353 in equation 6.5.6. there is negative relationship in terms of employment size. The R-square is 0.9939 indicating that over 90 % changes in income could be

traced to changes in the explanatory variables while the DW is 2.5427.

The footwear sub-sector is depicted by equation 6.5.7. The result here shows that R-square is 0.9937 which is a very good measure for goodness of fit. All the coefficients are positive except for the total labour employed with -7.6200 indicating that there is negative relationship between total employment and income . The t-ratio for this sector is almost zero.

Wood and wood products and furniture and fixtures

The wood and furniture and fixtures sub-sectors are represented by equations 6.5.8 and 6.5.9. For the wood sub-sector, there is positive but low relationship as indicated by the coefficient 0.0008; the t-ratio too is low. The sector (DFI SECT 3) general has positive relationship with income; as indicated by the positive coefficient characterising the various variables. The r-square for this sub-sector is 0.9944 which indicates a very good fit.

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For the furniture and fixtures sub-sector. the investment coefficient is negative -0.0008, showing that there is negative relationship between this sub-sector and income; the

t-ratio is 0.0015 which is low. Direct private foreign investment in this sector is very low as indicated by 0.0009 value. The r-square is 0.9944 indicating that about 90 % changes in income could be traced to changes in the explanatory variables.

Paper and paper products, printing and publishing

Equations 6.5.10 and 6.5.11 represents the behaviour of private foreign investment in the paper, printing and publishing sub-sectors in relation to income. For the paper sub-sector, equation 6.5.10, direct private foreign investment is characterised by positive relationship with income, although direct investment in the main sector (SECT.4) indicate negative for this sub-sector. The R-square is 0.9952 which is very high and a good measure of goodness of fit. The t-ratios are almost zero.

For the printing and publishing sub-sectors, investment has positive correlation with income although very low at 0.0001. For this sector (DFI SECT4) the coefficient is 4.5000 which is still high showing positive correlation with income. The R-square is 0.9911 indicating that over 90 % of the changes in income are traceable to changes in the explanatory variables. There is also inverse relationship between total labour employed and income in this equation as indicated by the negative value -8.3500. The t-ratios are generally low

almost zero.

Industrial chemicals, other chemicals, petroleum refineries, miscellaneous petroleum and coal products, rubber and plastics

These sub-sectors, industrial chemicals, other chemicals, petroleum refineries, miscellaneous petroleum and coal products, rubber and plastics are captured by equations 6.5.12 to 6.5.17 From equation 6.5.12 the coefficient of DFI_Sub_IND.CH is 0.0001, this indicates a very low relationship with respect to income. Same holds for DFI_SECT5 though both have very low t-ratios 0.0001. The value -2.700, the coefficient of total labour employed indicates that there is negative relationship with respect to income. The R-square is 0.9974 indicating a very good fit.

Other chemicals is depicted by the equation 6.5.13, here investment has negative relationship with income. Direct foreign investment in this sector (SECT 5) shows a positive but very low coefficients. Total output in this sector is the only one with high positive value of 4.2252 indicating that there is positive correlation between total output and income. The R-square is 0.9971 which is a very good fit.

Petroleum refineries is depicted by equation 6.5.14. Direct private foreign investment in this sub-sector is highly

negative as indicated by the negative coefficient -8.2900 in the equation. there is thus, negative relationship between direct private foreign investment in the petroleum refineries and national income. The t-ratio of almost zero attests to this fact. Total labour employed has positive but very low value of coefficient 0.0001 and the t-ratio almost zero.

For the miscellaneous petroleum and coal products, the coefficient of direct investment in this sub-sector is low at 0.0015 with same t-ratio. The R-square is 0.9973 indicating that over 90% changes in income could be traced to changes in the explanatory variables.. The t-ratios are generally low almost zero.

The rubber sub-sector has positive but low correlation with income. With R-square 0.9973, while the rubber sub-sector is characterised by very low t-ratios except for the total output with 0.3253. The R-square is 0.9971 indicating a very good fit.

Pottery china earthenware, glass and glass products, other non-metallic mineral products

Equations 6.5.18, 6.5.19 and 6.5.20 capture pottery china, glass and other non-metallic mineral products. Direct private foreign investment in the pottery sub-sector has negative value coefficients of -6.3600; this shows that there

is a negative relationship between foreign investment in this sub-sector and income in the economy; the t-ratio is 0.0002 which is very low. The R-square is 0.9911 which is very high. This indicates that over 90% changes in income could be traced to changes in the explanatory variables.

For the glass and glass products sub-sector, foreign investment in this sector shows a positive but very low coefficient of 0.0001, the t-ratio is almost zero and the R-square is 0.9910 which shows a good fit of data.

Other non-metallic mineral products is depicted by equation 6.5.20. The coefficient is negative -2.4400 indicating a negative relationship between direct private foreign investment in the other non-metallic minerals and income in the economy. Direct private foreign investment in the main sector (DFI SECT6) is however positive with 2.6700. The R-square is 0.9914 which indicates a good fit of data.

Iron and steel, non-ferrous metals

The iron and steel and non-ferrous metals sub-sectors are depicted by equations 6.5.21 and 6.5.22. Direct private foreign investment in the iron and steel sub-sectors indicate a negative coefficient of -0.0007 with a very low t-ratio, direct private foreign investment in this sector (DFI SECT 7) comprising iron and steel and non-ferrous metals however, has

positive but very low 0.0005 coefficient with t-ratio almost zero. The R-square is 0.0068 indicating a good fit.

For the non-ferrous metals, direct private foreign investment in this sub-sector shows a negative and very low coefficient of 0.0010. This equation also indicate that investment in both the iron and steel and non-ferrous metals (DFI SECT 7) is highly negative. The average t-ratio is almost zero while the R-square is 0.9964 indicating a good fit.

Fabricated metals, non-electrical materials, electrical materials, transport, professional and scientific equipment

Equations 6.5.23 to 6.5.27 capture the relationship between fabricated metals, non-electrical materials, electrical materials, transport, professional and scientific equipment sub-sectors in relation to national income. For the fabricated metals sub-sector, the coefficient indicates negative value -0002 which shows that there is an inverse relationship with income. Total labour employed also shows negative value of - 7.6000 while total output has positive value of 5.2403. The overall t-ratio is that of low value. The R-square is 0.9931 indicating a good fit.

For the non-electrical materials, the R-square is 0.9908

indicating a very good fit. The t-ratio is very low too almost zero; 0.0001 is the coefficient of direct private foreign investment in the sector (DFI SECT. 8) while negative value of -0.0001 is the coefficient of total labour employed. There is however, strong positive coefficient of 5.8689 for total output. This shows that there is positive relationship between total output and income. The R-square is 0.9908 indicating a very good fit.

For the electrical materials sub-sector, the coefficient of 0.0005 indicates a positive but very low value; the t-ratio is almost zero. There is also negative coefficient of -3.5300 for total labour employed in this equation. 5.1868 is the coefficient of total output indicating a strong relationship between gross output and income in the economy. The R-square is 0.9929 indicating a good fit.

The transport sub-sector is depicted by equation 5.5.26. This sub-sector' coefficient is 0.0001 indicating a very low but yet positive relationship with income. This can be attested to by the negative coefficient of -5.7900 of DFI-SECT 8 in the equation. The t-ratios are almost zero but the R-square is 0.9920 indicating a good fit.

For the professional equipment, only total output with coefficient 5.1788 seems to have positive relationship with income. The R-square for this equation is 0.9954 which is a good fit.

Other manufacturing

The other manufacturing sub-sector is captured by equation 6.5.28, the coefficient of direct private foreign investment in this sector is negative -5.8434, indicating an inverse relationship with income. Direct private foreign investment in the sector (DFI-SECT 9) however, shows positive value of 5.8437 indicating a positive correlation with respect to income in the economy. Employment size has positive but very low coefficient of 0.0001 while total output's coefficient is 4.7254, the t-ratios are on the high side with 2.1259, 2.1259, 0.0001 and 0.3297 respectively. The R-square is however very high 0.9968 indicating that over 90% of changes in income are traceable to changes in the explanatory variables.

Private Savings Block

$$S_{pt} = a + bDFI_SUB_SECTORij + cDFI_SECTORj + dEMPLOY_SIZEj$$

$$+ eOUTPUTj + U_t$$

$$S_{pt} = 9.9329 - 3.100DSFP - 5.9000DS1 - 2.7000TL + 0.0911TO$$
$$(4.6000) \quad (5.4000) \quad (0.0001) \quad (0.0980)$$
$$R^2 = 0.2888$$
$$DW = 1.2430 \qquad .....6.6.1$$

$$S_{pt} = 10.0322 + 0.0001DSBV - 1.0500DS1 - 2.6400TL + 0.0858TO$$
$$(0.0001) \quad (9.4000) \quad (0.0001) \quad (0.0954)$$
$$R^2 = 0.3070$$
$$DW = 1.5676 \qquad .....6.6.2$$

$$S_{pt} = 6.8031 + 0.0001DSTB - 6.8500DS1 - 2.3500TL + 0.0345TO$$
$$(0.0001) \quad (4.1000) \quad (0.0002) \quad (0.1241)$$
$$R^2 = 0.3221$$
$$DW = 1.0030 \qquad .....6.6.3$$

$$S_{pt} = 4.7621 - 2.6200DSTX + 0.0002DS2 - 1.3300TL + 0.0444TO$$
$$(0.0001) \quad (0.0001) \quad (0.0001) \quad (0.0935)$$
$$R^2 = 0.3935$$
$$DW = 1.0006 \qquad .....6.6.4$$

$$S_{pt} = -3.6927 + 0.0002DSWP + 2.1000DS2 - 5.4000TL - 0.0220TO$$
$$(0.0001) \quad (4.1000) \quad (0.0001) \quad (0.0900)$$
$$R^2 = 0.3444$$
$$DW = 2.4006 \qquad .....6.6.5$$

$$S_{pt} = -3.4170 + 0.0004DSLT - 4.7400DS2 - 8.0400TL - 0.0036TO$$
$$(0.0003) \quad (4.5700) \quad (0.0001) \quad (0.1064)$$
$$R^2 = 0.1841$$
$$DW = 1.2403 \qquad .....6.6.6$$

$$S_{pt} = 3.4045 - 5.0700DSFT - 9.8800DS2 - 6.7300TL + 0.0012TO$$
$$(1.8300) \quad (4.9700) \quad (0.0001) \quad (0.1155)$$
$$R^2 = 0.0424$$
$$DW = 1.0006 \qquad ....6.6.7$$

$$S_{pt} = 2.3285 + 0.0002DSWD - 1.2500DS3 - 1.4800TL - 0.0068TO$$
$$(0.0004) \quad (0.0001) \quad (0.0001) \quad (0.0666)$$
$$R^2 = 0.1324$$
$$DW = 1.5102 \qquad ....6.6.8$$

$$S_{pt} = 2.3663 - 0.0003DSFF + 0.0003DS3 - 1.4800TL - 0.0066TO$$
$$(0.0004) \quad (0.0004) \quad (0.0001) \quad (0.0667)$$
$$R^2 = 0.1316$$
$$DW = 1.3251 \qquad ......6.6.9$$

$$S_{pt} = 1.1344 - 4.5000DSPP + 0.0001DS4 - 4.2700TL - 0.0358TO$$
$$(0.0006) \quad (0.0001) \quad (0.0002) \quad (0.4475)$$
$$R^2 = 0.0649$$
$$DW = 1.3210 \qquad ....6.6.10$$

$$S_{pt} = -1.6912 + 0.0001DSPB + 2.5110DS4 + 3.2900TL - 0.0499TO$$
$$(0.0003) \quad (0.0001) \quad (0.0001) \quad (0.0589)$$
$$R^2 = 0.1285$$
$$DW = 1.4130 \qquad .....6.6.11$$

$$S_{pt} = 4.0412 - 6.3100DSIC + 4.6000DS5 - 1.0400TL - 0.0097TO$$
$$(0.0002) \quad (4.8200) \quad (0.0001) \quad (0.1178)$$
$$R^2 = 0.0359$$
$$DW = 1.9601 \qquad .....6.6.12$$

$$S_{pt} = 7.2824 - 1.2100DSOC + 5.1100DS5 - 1.1600TL - 0.1487TO$$
$$(0.0003) \quad (0.0001) \quad (0.0001) \quad (0.3708)$$
$$R^2 = 0.0434$$
$$DW = 1.1224 \qquad ....6.6.13$$

$$S_{pt} = 3.8668 + 1.8800DSPE - 4.0000DS5 - 8.7700TL - 0.0250TO$$
$$(0.0001) \quad (4.3600) \quad (0.0001) \quad (0.1422)$$
$$R^2 = 0.0310$$
$$DW = 1.5120 \qquad .....6.6.14$$

$$S_{pt} = 7.8533 - 0.0011DSMI - 3.0300DS5 - 8.4600TL - 0.0104TO$$
$$(0.0001) \quad (3.3600) \quad (0.0001) \quad (0.0965)$$
$$R^2 = 0.3276$$
$$DW = 1.3251 \qquad ...6.6.15$$

$$S_{pt} = 0.9202 + 0.0001DSR - 1.1700DS5 - 2.6000TL - 0.0361TO$$
$$(0.0003) \quad (4.7000) \quad (0.0001) \quad (0.1265)$$
$$R^2 = 0.0442$$
$$DW = 1.3042 \qquad \text{....6.6.16}$$

$$S_{pt} = 3.4007 + 6.5600DSPL - 3.8600DS5 - 7.8300TL - 0.0161TO$$
$$(0.0001) \quad (5.8800) \quad (0.0001) \quad (0.1165)$$
$$R^2 = 0.0299$$
$$DW = 1.9609 \qquad \text{......6.6.17}$$

$$S_{pt} = 1.0299 - 6.9000DSPO + 1.8200DS6 - 1.5300TL - 0.0053TO$$
$$(0.0001) \quad (1.9900) \quad (0.0001) \quad (0.0990)$$
$$R^2 = 0.1044$$
$$DW = 1.5224 \qquad \text{....6.6.18}$$

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$$S_{pt} = 2.0001 + 0.0001DSGL + 1.8900DS6 - 4.2700TL - 0.0444TO$$
$$(0.0001) \quad (1.9700) \quad (0.0001) \quad (0.0872)$$
$$R^2 = 0.1300$$
$$DW = 1.6750 \qquad \text{.....6.6.19}$$

$$S_{pt} = 3.5766 - 5.3600DSON + 6.4800DS6 - 7.0400TL - 0.0122TO$$
$$(7.9900) \quad (7.2100) \quad (0.0001) \quad (0.0529)$$
$$R^2 = 0.1430$$
$$DW = 1.7210 \qquad \text{.....6.6.20}$$

$$S_{pt} = -5.8790 + 0.0001DSIR + 0.0006DS7 + 6.0600TL - 0.0456TO$$
$$(0.0006) \quad (0.0009) \quad (0.0002) \quad (0.0872)$$
$$R^2 = 0.0906$$
$$DW = 1.2510 \qquad \text{.....6.6.21}$$

$$S_{pt} = -6.2188 + 0.0005DSNF + 0.0001DS7 + 5.6100TL - 0.0871TO$$
$$(0.0001) \quad (0.0001) \quad (0.0002) \quad (0.1145)$$
$$R^2 = 0.1148$$
$$DW = 1.6541 \qquad \text{....6.6.22}$$

$$S_{pt} = 4.5299 + 0.0006DSFM - 2.6400DS8 - 1.9300TL + 0.1854TO$$
$$(0.0002) \quad (0.0001) \quad (0.0001) \quad (0.0830)$$
$$R^2 = 0.5216$$
$$DW = 1.2342 \qquad \text{.....6.6.23}$$

$$S_{pt} = 8.1132 - 0.0001DSNE + 4.3600DS8 - 1.3000TL - 0.0246TO$$
$$(0.0001) \quad (0.0001) \quad (0.0001) \quad (0.0714)$$
$$R^2 = 0.2033$$
$$DW = 1.1126 \qquad \text{.....6.6.24}$$

$$S_{pt} = 5.9806 - 2.9300DSEM - 1.3000DS8 - 1.1600TL + 0.0234TO$$
$$(0.0001) \quad (0.0001) \quad (0.0001) \quad (0.1266)$$
$$R^2 = 0.0442$$
$$DW = 1.0006 \qquad \text{....6.6.25}$$

$$S_{pt} = 3.8513 + 2.1600DSTR - 2.7800DS8 - 7.5800TL - 0.0171TO$$
$$(0.0003) \quad (0.0002) \quad (0.0001) \quad (0.0944)$$
$$R^2 = 0.0314$$
$$DW = 1.0971 \qquad .....6.6.26$$

$$S_{pt} = 3.0323 - 0.0001DSPQ + 3.1400DS8 - 7.2700TL + 0.02556TO$$
$$(0.0002) \quad (0.0001) \quad (0.0001) \quad (0.1021)$$
$$R^2 = 0.0632$$
$$DW = 1.3242 \qquad ....6.6.27$$

$$S_{pt} = -1.1518 - 0.6890DSOM + 0.6890DS9 + 2.1300TL - 0.0305TO$$
$$(0.7597) \quad (0.7598) \quad (0.0002) \quad (0.1178)$$
$$R^2 = 0.1090$$
$$DW = 1.5432 \qquad .....6.6.28$$

Analysis:

The private savings block comprising equations 6.6.1 to 6.6.28 depicts the behavioural relationships between the various manufacturing sub-sectors with private foreign investment concerns and their relationship with private savings in the economy. The general observation concerning this block is the fact that most of the R-squares are very low with the t-ratios fluctuating between high and low values of 0.0001 and 9.0000.

Food, beverages and tobacco

The food, beverages and tobacco sub-sectors are depicted by equations 6.6.1, 6.6.2 and 6.6.3. In the food sub-sector, the coefficient is -3.1000 indicating a negative relationship between this sub-sector and private savings. The t-ratio for this sub-sector is really high at 4.6000. Direct private foreign investment (DPFI-SECT.1) also has negative sign with value of -5.9000. The sign of total labour employed is also negative but total output has positive correlation with private savings with coefficient of 0.0911. The R-square for this equation is really low at 0.2888 indicating that only 28 percent of changes in private savings are traceable to the explanatory variables.

The beverage sub-sector has positive but low coefficient of 0.0001 with t-ratio 0.0001. Only total output has positive correlation with private savings with 0.0858 while others i.e employment size and DFI-SECT 1 have negative values. The R-square is 0.3070, which is very low and not too good a fit.

For the tobacco sub-sector the sign of coefficient is positive, although the value is very low at 0.0001. For direct private foreign investment in this sector (DFI-SECT 1) the coefficient carry a negative sign -6.8500 indicating a negative relationship between private foreign investment in this sector and private savings. The R-square is 0.3221 which

is not a good fit. Also, the DW is 1.5676 indicating inconclusiveness.

Textiles, wearing apparel, leather and footwear

The textiles, wearing apparel, leather and footwear sub-sectors are depicted by equations 6.6.4 to 6.6.7. The coefficient of the textile sub-sector -2.6200 is negative with very low t-ratio. There is therefore a negative relationship between this sub-sector and private savings. Direct private foreign investment in sector 2 (DFI-SECT2) has a positive sign but a very low value. The coefficient of the total labour employed is -1.3300 indicating a negative relationship with private savings. R-square for this equation is 0.3935 which is a low value.

For the wearing apparel sub-sector the coefficient is 0.0002 though positive still low, however, there is a positive relationship between this sub-sector and private savings. The coefficient of total labour employed is -5.4000 a negative relationship with private savings. The R-square for this equation is 0.3444 which is still low.

Direct private foreign investment in the leather sub-sector possesses a positive but low coefficient of 0.0004 with the t-ratio equal to 0.0003. The coefficient of direct private foreign investment in this sector (DFI-SECT.2) is -4.7400

indicating a negative relationship with private savings. The R-square is very low too 0.1841, not a good fit.

For the footwear sub-sector, -5.0700 is the coefficient,with this value it is clear that there is a negative relationship between direct private foreign investment in the footwear sub-sector and private savings. The t-ratios are a bit on the high side. Very low R-square is observed 0.0424.

Wood and wood products, furniture and fixture

The wood and wood products, furniture and fixture sub-sector are depicted by equations 6.6.8 and 6.6.9. For the wood sub-sector, equation 5.6.8, the coefficient of direct private foreign investment in this sub-sector is 0.0002 indicating positive relationship but low value. There is however, a positive relationship between this sub-sector and private savings, with very low t-ratios. The R-square is 0.1342 which is very low, this is not a too good fit.

For the furniture and fixture sub-sector, the coefficient of direct private foreign investment in this sub-sector is -0.0003 which indicates a negative relationship between furniture and fixture sub-sector and private savings. The R-square is 0.1316 while the DW is 1.3251 indivating inconclusiveness of test.

Paper and paper products, printing and publishing

Equations 6.6.10 and 6.6.11 depict the paper and paper products and printing and publishing respectively. For the paper and paper products sub-sector, the coefficient is -4.5000 indicating a negative relationship with private savings; the t-ratio 0.0006 is very low. Except for direct private foreign investment in sector 4 which has positive sign in this equation others have negative coefficients. The R-square is very low at 0.0649

For the printing and publishing sub-sector, all the coefficients have positive signs except for total output with negative value -0.0499, the t-ratios are very low, almost zero. The R-square is 0.1285 which indicate a not too good fit for this equation.

Industrial chemicals, other chemicals, petroleum refineries, miscellaneous petroleum and coal products, rubber and plastics.

Equations 6.6.12 to 6.6.17 indicate the behavioural relationship between the sub-sectors industrial chemicals, other chemicals petroleum refineries, miscellaneous petroleum and coal products, rubber and plastics and private savings. For the industrial chemicals equation, all the variable but the direct private foreign investment in the sector (DFI-SECT 5) have negative signs for their coefficients. There is thus

negative relationship between these variables and private savings in the economy. The R-square is very low 0.0359.

For the other chemicals, direct private foreign investment in this sub-sector has negative coefficient of -1.2100 while direct foreign investment (DFI SECT 5) has positive sign and value of 5.1100, the t-ratios are very low almost zero on the average. The R-square is very low with 0.0434.

For the petroleum refineries, positive sign is noticed agreeing with the a priori expectation with value at 1.8600; the t-ratio is also very low here, 0.0001. R-square is low too 0.0310.

The miscellaneous petroleum and coal products sub-sector has negative coefficient thereby indicating a negative relationship between this sub-sector and private savings. R-square is 0.3276, indicating that about 32 percent of the changes in the value of private savings are traceable to changes in the explanatory variables.

For the rubber sub-sector, all coefficients in this equation are negative except for the private foreign investment in this sub-sector with positive sign and value 0.0001 The t-ratio s are generally low on the average 0.0001.

The R-square is 0.0442 which indicates a not too good fit.

For the rubber sub-sector, there is positive sign for coefficient and the value is 6.5600 which is on the high side. The t-ratio is 0.0001 on the average, while the R-square is 0.0299.

Pottery china earthenware, glass and glass products, other non-metallic mineral products

Equations 6.6.18 to 6.6.20 depict the relationship between direct private foreign investment in pottery, glass and other non-metallic mineral products sub-sector and private savings. For the pottery sub-sector, all the coefficients are negatives for the independent variables expect for direct investments (DFI-SECT. 6) with positive sign and 1.8200 value. The t - ratios are very low while the R-square is 0.1044, this is also not a too good test of fit.

The glass sub-sector is charaterised by positive sign of coefficient but very low 0.0001, total labour employed also has negative coefficient - 4.2700 which indicate a negative relationship between total labour employed and private savings. The t-values are low. The R-square is 0.1300 indicating a poor fit.

For the other non-metallic mineral products the coefficient of this sub-sector is -5.3600 indicating that there is a negative relationship between direct private foreign investment and private savings. High t-ratios of 7.9900 is observed in this equation with very low R-square of 0.1430.

Iron and steels and non-ferrous metals

Equations 6.6.21 and 6.6.22 capture the behavioural relationship between the iron and steels and non-ferrous metals respectively. for the iron and steels sub-sector the R-square is 0.0906, this measure is low; though all the coefficients of the explanatory variables except that of total output are positive, the t-ratios are still very low.

For the non-ferrous sub-sector, all the coefficients of the variables possess positive signs except that of total output. This indicate that there is positive relationship between this sub-sector and private savings. The R-square is very low at 0.1148; not too good a fit.

Fabricated metals, non-electrical materials, electrical materials, transport, professional and scientific equipment

These sub-sectors are captured by equations 6.6.23 to 6.6. 27. For the fabricated metals sub-sector, direct private foreign investment in this sector's coefficient has positive

sign thereby satisfying a priori expectation, however this value is low at 0.0006. The t-ratios of this equations are also low generally; the R-square is 0.5216.

For the non-electrical materials; the coefficient of this sub-sector is negative with low value of -0.0001, the average t-value is 0.0001. The R-square for this equation is 0.2033.

For the electrical material, the coefficient of direct private foreign investment in this sub-sector is negative -2.9300. In fact, except for the coefficient of total output, all other coefficients are negative. The R-square is 0.0442 which is a very poor fit. T-values average 0.0001.

For the transport sub-sector, all the coefficients of the equation except for the direct private foreign investment in this sectors are negative. The t-ratios are very low with R-square 0.0314.

For the professional equipment, there is a negative coefficient between private foreign investment and private savings as indicated by the value of the coefficient -0.0001, the t-ratio too is very low 0.0002. The R-square is 0.0632 which is low

Other manufacturing sector

Equation 6.6.28 depict the relationship between the other manufacturing sector and private savings. The coefficient of direct private foreign investment in this sub-sector is negative with -0.6890 as value. The t-ratio is high 0.7597, while the R-square is 0.1090.

Government Savings Block

$S_{gt} = a + bDFI_SUB_SECTORij + cDFI_SECTORj + dEMPLOY_SIZEj$

$+ eOUTPUT + U_t$

$S_{gt} = 0.6421 - 1.5000DSFP + 1.4000DS1 + 0.0001TL + 0.0237TO$

$(1.4000) \quad (1.6000) \quad (4.8000) \quad (0.0292)$

$R^2 = 0.6557$

$DW = 1.2354$ ...6.7.1

$S_{gt} = 1.2668 + 2.4700DSBV - 6.6300DS1 + 0.0001TL + 0.0290TO$

$(7.2200) \quad (2.9100) \quad (4.3900) \quad (0.0303)$

$R^2 = 0.6192$

$DW = 1.3501$ 6.7.2

$S_{gt} = 1.5905 - 3.0100DSTB + 3.0100DS1 + 0.0001TL + 0.0361TO$

$(0.0001) \quad (1.3300) \quad (4.7100) \quad (0.0401)$

$R^2 = 0.6167$

$DW = 1.2432$ 6.7.3

$$S_{gt} = 1.3579 - 6.6700DSTX + 8.5900DS2 + 0.0001TL + 0.0310TO$$
$$(4.3800) \quad (4.2300) \quad (3.5800) \quad (0.0319)$$
$$R^2 = 0.6160$$
$$DW = 1.5006 \qquad .....6.7.4$$

$$S_{gt} = 2.0952 - 1.7100DSWP + 8.4800DS2 + 0.0001TL + 0.0320TO$$
$$(0.0004) \quad (1.3400) \quad (4.0200) \quad (0.0313)$$
$$R^2 = 0.6218$$
$$DW = 1.9631 \qquad .....6.7.5$$

$$S_{gt} = 3.0308 - 0.0001DSLT + 2.4000DS2 + 0.0001TL + 0.0274TO$$
$$(0.0001) \quad (1.5300) \quad (4.4600) \quad (0.0356)$$
$$R^2 = 0.5038$$
$$DW = 1.2561 \qquad ...6.7.6$$

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$$S_{gt} = 2.2479 + 1.4400DSFT - 1.4300DS2 + 7.3330TL + 0.0326TO$$
$$(3.7700) \quad (1.0300) \quad (3.3000) \quad (0.0238)$$
$$R^2 = 0.7787$$
$$DW = 1.8401 \qquad ....6.7.7$$

$$S_{gt} = -1.2223 + 0.0005DSWD + 4.1500DS3 + 0.0001TL + 0.0167TO$$
$$(0.0001) \quad (3.8800) \quad (6.0900) \quad (0.0209)$$
$$R^2 = 0.5339$$
$$DW = 1.2116 \qquad ...6.7.8$$

$$S_{gt} = -1.2521 - 5.6200DSFF + 0.0006DS3 + 0.0001TL + 0.0166TO$$

(0.0001) (0.0001) (6.0900) (0.0209)

$R^2 = 0.5344$

DW = 1.2411 ....6.7.9

$$S_{gt} = 2.5556 + 0.0001DSPP - 7.4800DS4 + 0.0001TL + 0.0356TO$$

(0.0001) (5.1900) (7.5900) (0.1325)

$R^2 = 0.5549$

DW = 1.2234 ....6.7.10

$$S_{gt} = 3.1603 - 7.0200DSPB - 7.0600DS4 + 9.8000TL + 0.0457TO$$

(9.3000) (6.0200) (4.9400) (0.0181)

$R^2 = 0.5548$

DW = 1.2458 ...6.7.11

$$S_{gt} = 1.2630 - 1.1900DSIC + 9.0700DS5 + 0.0001TL + 0.0153TO$$

(7.9400) (1.5300) (5.8300) (0.0373)

$R^2 = 0.4746$

DW = 1.2430 .....6.7.12

$$S_{gt} = 6.1759 - 1.5300DSOC + 7.5000DS5 + 8.6800TL - 0.3538TO$$

(9.0200) (4.1100) (5.0900) (0.1040)

$R^2 = 0.5914$

DW =1.4242 .....6.7.13

$$S_{gt} = 2.2439 + 2.5500DSPE + 3.9400DS5 + 0.0001TL + 0.0019TO$$

(5.3200) (1.4200) (8.5000) (0.0462)

$R^2 = 0.4565$

DW = 1.3240 ....6.7.14

$$S_{gt} = 0.6664 + 0.0001DSMI + 7.9000DS5 + 0.0001TL + 0.0137TO$$

(0.0002) (1.2600) (4.6700) (0.0361)

$R^2 = 0.4893$

DW = 1.9062 ....6.7.15

$$S_{gt} = 2.3384 - 7.1700DSR - 1.2800DS5 + 0.0001TL + 0.0248TO$$

(0.0001) (1.4700) (6.1500) (0.0395)

$R^2 = 0.4945$

DW = 1.4249 .....6.7.16

$$S_{gt} = 1.8264 + 3.7500DSPL - 2.2800DS5 + 0.0001TL + 0.0133TO$$

(4.9000) (1.8100) (4.8400) (0.0358)

$R^2 = 0.5027$

DW = 1.2147 ...6.7.17

$$S_{gt} = 1.2902 + 6.4000DSPO + 4.3600DS6 + 0.0001TL + 0.0267TO$$

(0.0001) (6.4900) (4.7700) (0.0322)

$R^2 = 0.4849$

DW = 1.3256 ......6.7.18

$$S_{gt} = 1.1785 + 5.7600DSGL + 4.4300DS6 + 0.0001TL + 0.0309TO$$
$$(0.0001) \quad (6.4700) \quad (4.8900) \quad (0.0287)$$
$$R^2 = 0.4858$$
$$DW = 1.6310 \qquad .....6.7.19$$

$$S_{gt} = 0.8348 + 3.7100DSON + 1.1100DS6 + 0.0001TL + 0.0380TO$$
$$(2.6800) \quad (2.4200) \quad (5.4000) \quad (0.0177)$$
$$R^2 = 0.4777$$
$$DW = 1.3302 \qquad ....6.7.20$$

$$S_{gt} = 8.2736 - 2.4400DSIR - 4.3200DS7 + 2.6500TL + 0.0652TO$$
$$(0.0001) \quad (0.0002) \quad (5.4600) \quad (0.0227)$$
$$R^2 = 0.6647$$
$$DW = 1.3340 \qquad ....6.7.21$$

$$S_{gt} = 2.5412 - 3.930DSFM - 1.8300DS8 + 0.0001TL + 0.0363TO$$
$$(9.6300) \quad (5.5300) \quad (4.4700) \quad (0.0368)$$
$$R^2 = 0.4903$$
$$DW = 1.3012 \qquad ......6.7.23$$

$$S_{gt} = 3.7201 - 3.8800DSNE - 1.6600DS8 + 0.0001TL + 0.0447TO$$
$$(0.0003) \quad (4.3300) \quad (4.1200) \quad (0.0232)$$
$$R^2 = 0.5433$$
$$DW = 1.1125 \qquad ....6.7.24$$

$$S_{gt} = 2.0903 + 6.5100DSEM - 3.3300DS8 + 0.0001TL + 0.0393TO$$
$$(0.0002) \quad (4.3900) \quad (5.5100) \quad (0.0399)$$
$$R^2 = 0.4853$$
$$DW = 1.5437 \qquad .....6.7.25$$

$$S_{gt} = 2.6455 + 1.4000DSTR - 3.8900DS8 + 0.0001TL + 0.0453TO$$
$$(0.0001) \quad (6.5200) \quad (4.3000) \quad (0.0296)$$
$$R^2 = 0.4828$$
$$DW = 1.4120 \qquad ....6.7.26$$

$$S_{gt} = 2.9125 + 0.0001DSPQ - 4.1600DS8 + 0.0001TL + 0.0298TO$$
$$(0.0001) \quad (4.3700) \quad (4.0400) \quad (0.0314)$$
$$R^2 = 0.5174$$
$$DW = 1.4378 \qquad ...6.7.27$$

$$S_{gt} = 1.9764 - 0.0978DSOM + 0.0978DS9 + 0.0001TL + 0.0470TO$$
$$(0.2498) \quad (0.2498) \quad (7.3600) \quad (0.0387)$$
$$R^2 = 0.4776$$
$$DW = 1.3232 \qquad ....6.7.28$$

Analysis:

The government savings block comprising equations 6.7.1 to 6.7.28 depicts the behavioural relationship between the various manufacturing sub-sectors with direct private foreign investment concerns and their relationship with government savings. most of the results in this block indicate good fits.

the R-square were substantially better than the ones obtained from private savings block. Almost all the R-squares are above 50 percent.

Food, beverages and tobacco

Equations 6.7.1 6.7.2 and 6.7.3 approximate the behavioural relationship between the food, beverages and tobacco sub-sectors and government savings. Direct private foreign investment (DFI) in this sector comprising food, beverages and tobacco have coefficients 1.4000, -6.6300 and 3.1000 respectively. Also, the coefficient of employment size in these sub-sectors are 0.0001, 0.0001 and 0.0001 respectively indicating that there is positive relationship between employment size and government savings. The coefficients of total output in these sub-sectors were also positive agreeing with the a priori expectation.

For the food sub-sector, the R-square is 0.6557 indicating that about 65 percent of changes in government savings could be traceable to changes in the explanatory variables. The t-ratios were however on the high side, with the t-ratio of the total labour employed amounting to 4.8000

For the beverages sub-sector, the R-square is 0.6192 indicating that about 61 per cent of changes in the dependent variable could be traced to changes in the explanatory

variables. The t-ratio for DFI-SUB-BEV is 7.2000 which is high compared with 0.0303 from TOT-OP.

The tobacco sub-sectors has a negative relationship with government savings as indicated by -2.0100, the t-value is moderate at 0.0001, almost zero

Textiles, wearing apparel, leather and footwear

The textiles, wearing apparel, leather and footwear sub-sectors relationship with government savings are captured by equations 6.7.4, 6.7.5 , 6.7.6 and 6.7.7. For the textile sub-sector, its coefficient has negative value of -6.6700 and for direct private foreign investment in this sector (DFI-SECT. 2) the coefficient is 8.5900 while the coefficient of employment size or total labour is 0.0001 and for total output the coefficient is 0.0310, this indicate that apart from DFI-SUB-TEX, all other variables have positive relationship with government savings. The R-square of this equation is 0.6160 indicating that over 60 percent of the changes in the dependent variable could be traced to changes in the explanatory variables. The t-ratios are also high.

For the wearing apparel sub-sector, the sign of the coefficient is negative indicating that there is negative relationship between this sub-sector and government savings. The R-square for this equation is also high at 0.6218 while

DFI-SUB-WAPP has low t-value of 0.0004, the total labour t-value is on the high side with 4.0200.

The leather sub-sector is depicted by equation 6.7.6. Here, the coefficient has negative value sign and low value of -0.0001, the t-value is also low at 0.0001, the R-square is 0.5038 indicating that about 50 per cent of changes in the dependent variables are traceable to changes in the explanatory variables.

For the footwear sub-sector, the R-square is high, 0.7787 indicating a good fit. Both the coefficients of sub-sector (DFI-SUB-FOOTW) and total employed (TOT-Lab) and total output (TOT OP) have positive signs, while DFI-SECT 2 has negative sign. The t-values are a bit on the high side.

Wood and wood products, furniture and fixtures

Equations 6.7.8 and 6.7.9 depict the relationship between the private foreign investment in these sub-sectors and government savings. For the wood and wood products equation, all the coefficients have positive sign indicating that there is positive correlation between the wood and wood products and government savings. The R-square is 0.5339 indicating that about 53 per cent of changes in the dependent variables could be explained by changes in the explanatory variables. t-ratio for DFI-SUB-WOOD is 0.0001 which is still low.

For furniture and fixture, the coefficient of DFI-SUB-FF carries a negative sign -5.6200 indicating a negative correlation between the furniture and fixture sub-sector and government savings. The standard error for this variable is 0.0001. The R-square is 0.5344

Paper and paper products, printing and publishing

The paper and paper products and printing and publishing are captured by equations 6.7.10 and 6.7.11. Direct private foreign investment in the paper and paper products sub-sector (DFI-SUB-PAPER) indicate a positive sign of coefficient showing that there is positive but low relationship between investment in this sub-sector and government savings. Total employment size also shows positive sign of 0.0001. The R-square for this equation is 0.5549

For the printing and publishing sub-sector, the coefficient of DFI-SUB-PR & PB carries a negative sign indicating that there is a negative relationship between this sub-sector and government savings. The R-square is 0.5548 which indicate that over 55 per cent changes in government savings could be traced to the explanatory variables. This is a good fit.

Industrial chemicals, other chemicals, petroleum refineries, miscellaneous petroleum and coal products, rubber and plastics.

Equations 6.7.12 to 6.7.17 depict the behavioural relationship between industrial chemicals, other chemicals, petroleum refineries, miscellaneous petroleum and coal products, rubber and plastics and government or public savings.

For the industrial chemical sub-sector, equation 5.7.12, the R-square is 0.4746, indicating that about 47 per cent changes in the dependent variables could be traced to changes in the explanatory variables, this is a fair fit. Except for DFI-SUB-IND. CH. with negative sign coefficient, all other variables have positive signs. The t-ratios for this equation are on the high side as indicated by equation 5.7.12

For the other chemical sub-sector, the situation is that of positive signs for the coefficient of the independent variables except that of DFI-SUB-OTH. CH. with negative sign of -1.5300. with t-ratio 9.0200. The R-square of this equation is 0.5914 which is a good fit.

The petroleum sub-sector has positive sign coefficient 2.5500 indicating that there is a positive relationship between private foreign investment in the petroleum refineries

and government savings. The t-ratio is however high for the sub-sector at 5.3200. The R-square for this equation is 0.4565.

For miscellaneous petroleum and coal products sub-sector, all the coefficients carry positive sign indicating positive relationship with government savings. The R-square for this sub-sector is 0.4893.

The rubber sub-sector has negative sign coefficient for DFI-SUB-RUBB, -7.1700 while for DFI-SECT 5, the coefficient carries a positive sign of 1.2800. The R-square for this equation is 0.4945.

For the plastics sub-sector the coefficient has positive sign of 3.7500 with the R-square at 0.5027, a good fit of data.

Pottery china earthenware, glass and glass products, other non-metallic mineral products

Equations 6.7.18 to 6.7.20 capture the pottery earthenware, glass and glass products, other non-metallic mineral products. From equation 5.7.18 direct private foreign investment indicate that the coefficient of DFI-SUB-POTT is high and positive at 6.4000 while that of total output is very low at 0.0267. The R-square for this equation is 0.4849

The glass and glass products sub-sector's coefficient is positive and high too at 5.7600 with t-ratio of 0.0001. The R-square of this equation is 0.4858 indicating a fair fit.

For the other non-metallic mineral products, all the coefficients carry positive signs and high values. The R-square is 0.4777 with t-ratio as high as 5.4000 as indicated in equation 6.7.20

Iron and steel, non-ferrous metals

Equations 6.7.21 and 6.7.22 capture the iron and steel and non-ferrous metals sub-sector. For the iron and steel sub-sector, the sign of the coefficient is negative -2.4400, indicating a negative relationship with government savings. The t-ratio too is low at 0.0001. Only the relationship between total labour employed and government savings seems to be positive. The R-square of this equation is 0.6647 indicating that about 66 per cent of changes in the dependent variables are traceable to changes in the explanatory variables.

Fabricated metals, non-electrical materials, electrical materials, transport, professional and scientific equipment

These sub-sectors are captured by equations 6.7.23 to 6.7.27. The coefficient of the fabricated metals is negative -3.9300 DFI-SUB-FAB MET indicating a negative relationship with

government savings. The coefficient of the sector (DFI-SECT .8) is also negative -1.8300 DFI-SECT 8. The coefficient of total labour employed here is low at 0.0001 though positive. Total output carries a low but positive coefficient 0.0363 TOT-OP. The t-ratios for this equation are very high. The R-square is 0.4903 indicating that about 40 per cent of the changes in government savings could be traced to the explanatory variables.

For the non-electrical materials sub-sector, the R-square is 0.5433 which is good. The t-ratio for the sub-sector is very low at 0.0003, while there is a negative sign for DFI-SECT 8, TOT-lab and TOT_OP carry positive signs.

For the electrical material sub-sector, the coefficient is positive and high at 6.5100 DFI-SUB-ELMA with very low t-values of 0.0002 and R-square of 0.4853.

The transport sub-sector has a positive sign coefficient and therefore a positive relationship with government savings and a low standard error of estimate. The R-square is 0.4828.

Equation 6.7.27 for the professional equipment depicts a positive coefficient sign for the relationship between this sub-sector and government savings. 0.0001 DFI-SUB-PROF. EQ. The R-square is 0.5174 which is a good fit.

Other manufacturing

For other manufacturing sub-sectors, equation 6.7.28 capture this. The coefficient of direct private foreign investment in this sub-sector is negative -0.0978 DFI-SUB-OTH MAN. indicating a negative relationship between this sub-sector and public savings. The t-ratio is a bit high at 0.4776.

CHAPTER SEVEN

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

7.0 Summary

In this study, we have attempted to analytically and empirically investigate the impact of direct private foreign investment in the manufacturing sector on Nigerian economic growth over the period 1980 to 1996.

The research has generally looked at the situation of direct private foreign investment in some identified sub-sectors, based on the International Standards of Industrial Classification (ISIC) in relation to some macro-economic variables viz: productivity growth in the manufacturing sector, national income, private and government savings.

It would be recalled that in the introductory part of this study, the basic aim was to identify, investigate and analyse the role of private foreign investment in the manufacturing sector on the economic growth of Nigeria over the period of 1980 to 1996.

Our empirical investigation in this study has revealed that direct private foreign investment in the manufacturing sub-sectors identified has contributed positively though not on equal proportion to productivity growth in the

manufacturing sector, national income, private and public savings.

On the estimation procedure adopted , the Ordinary Least Squares (OLS) estimation method with secondary data from 1980 to 1996 was applied. Also, in order to determine whether long-run relationship exists among the variables, the series were tested for stationarity.

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The empirical analysis began with a consideration of the time series characteristics of the data employed by considering the order of integration of each of the series using the Dickey- Fuller (DF) and Adjusted Dickey-Fuller (ADF) classes of unit root tests. This test was important not only to determine the order of integration of the series but also to verify if cointegration technique could be applied in estimating the model. The econometric package, Microfit was applied in the estimation procedure. Although some of the series were not I(0) or stationary in their levels, their residuals were confirmed to be stationary. After establishing that a long-run relationship exists between the variables, we proceeded to implement the OLS estimate of the model. The general finding is that there were positive relationships between direct private foreign investment in the identified manufacturing sub-sectors and productivity growth, national income, private and public savings though not on equal

proportion.

Generally, no doubt, Investment is the engine of economic growth and development. It puts national savings to productive use, caters for future job creation requirement, generates income and perpetuates the process of growth. In both developing and developed countries of the world, the volume of investment projects are critical to economic growth and development. The flow of foreign investment to complement domestic investment is a major focus of policy in all countries of the world.

In chapter one of this study where justification for the research was provided. We posited that a generally known situation is the continuous widening gap between the developed and developing nations of the world in terms of growth and development. While the developed nations continue to grow as a result of being able to attract enough capital for developmental purposes, the developing nations find it very difficult to attract same capital largely because of their economic and political instability. No doubt, considerable efforts are required by developing nations to get out of this uncomfortable situation by catching up or at least reduce this widening gap. One of the ways this could be done is to try as much as possible to seek or attract foreign investments.

7.1 **Conclusions**

In conclusion, in this study, we have examined the impact of direct private foreign investment on the economic growth of the country. The general finding is that there were positive relationships between direct private foreign investment in the identified manufacturing sub-sectors and productivity growth, national income, private and public savings though not on equal proportion. Although there have been descriptive studies on this topic, so far there have not been extensive empirical investigations on this topic. This study, therefore, tried to bridge this existing gap.

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It can therefore, be argued that in the light of this study, private foreign investments in the manufacturing sub-sectors identified in this research have contributed positively to productivity growth in the manufacturing sector, national income, private and government savings. The degree of impacts however, varies among the sub-sectors.

One cannot also overlook the limitations of this exercise and of the conclusions reached based on the outcome of the empirical results. These exist at two levels, theoretical and empirical.

At theoretical level, the use of quantitative methodology although allowing for considerable advantages, necessarily

introduces also a certain degree of simplification with respect to the underlying reality, and also assumes a certain degree of uniform behaviour as earlier stated in this study, which might not be there in many cases.

The major problem seems to arise at the empirical level, where the practical application of the methodology may suffer from many gaps in data availability. It is interesting to state here that the data used in this research except for very were available, their reliability is however the problem.

Finally, it can be safely argued that the methodological set-up and the empirical investigation adopted in this research provide at least an attempt at looking at a crucial issue of development and growth through direct private foreign investment.

7.2 Recommendations

One basic fact emerged from the study. In Nigeria, both the volume and the quality of productive investments, especially since the early 1980s, raise concern. The flow of foreign investment into the country has been very minimal despite Nigeria's existing natural attractions to investors such as longer domestic market, a geographical location capable of taking advantage of regional and continental markets, substantial natural resources, relatively cheap

labour and considerable amount of entrepreneurial talent.

Foreign capital is highly mobile and the competitive environment will not only attract but also ensure retention of foreign investment already on ground as a pre-condition for attracting new ones. Before the global debt crisis that began in 1982, private foreign investment was attracted to a country on account of certain key factors such as relative cost of labour, abundance of raw materials, the existing level of foreign investment in the country, Gross Domestic Product (GDP), the per capital income and the degree of political and policy stability.

Increasingly, such conditions as the quality of infrastructure, the consistency of government policies, the presence of an industrial fabric, the ability to stimulate and sustain domestic investment in the first instance, have become the basic conditions for attracting additional foreign investment. Most fiscal incentives are useful only when production has taken place and are therefore critical factors in terms of sustaining and expanding production.

In recent years, however, foreign private investment appears to be strongly influenced by the ability of a country to settle its international debts and willingness to adopt and implement a Structural Adjustment Programme (SAP). The ability

to settle international debt has become the over-riding condition for attracting foreign investment. Attractive fiscal incentives, against the back drop of mounting difficulties in debt-service payments, do not pave the way for the inflow of new foreign investment. The current high cost of foreign exchange in Nigeria is explained largely by debt service obligations, and by the use of unremitted Naira-based profits as foreign investment. Since foreign investors do not have independent yardstick for assessing the investment potentials especially of developing countries, the International Monetary Fund's (IMF) certificate of clean bill of health is a major indicator of a country's qualification for inflow of foreign investment.

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In Nigeria, a number of factors which significantly undermine the various efforts being made to attract foreign investment into the country have been identified in this study, these are: inconsistent government policies which creates an uncertain business climate and so makes meaningful planning operations difficult; instability of the political and economic environment in which foreign investment projects have to operate; inadequate infrastructural facilities such as transportation, energy, water and telecommunications thereby leading to increased investment capital outlays; absence of some key infrastructural projects -- metal alloy foundries, machine tools, etc; poorly developed industrial fabric;

inability of the country to settle its international debts resulting from the economic depression being witnessed in Nigeria since the beginning of the decade of the 1980s; insecurity of persons and property. There is also need to urgently reduce large budget deficits, strengthen the regulatory and institutional framework of capital markets and banking; avoid restrictions on long term capital inflow and outflow; correct structural problems such as excessive government intervention in the economy, labour and financial market distortions, overvalued and unstable real exchange rates, inefficient taxation and trade restrictions.

Based on the strength of our findings a number of policy lessons can be learnt. One of these is the need to moderate, through a combination of carefully thought-out and assiduously implemented monetary and fiscal policies the rate of domestic inflation. High inflation, especially the variant that hold sways in nigeria, is disruptive to economic and business relations. Astronomical budget deficits typically financed by the banking system would invariably precipitate inflation. Similarly, adoption of wholesale or unbridled exchange rate depreciation in an import dependent economy like Nigeria's would most likely induce price escalations.

More intuitively appealing however, and warranting future investigation is the relative impact of exchange rate

alignment in inducing foreign capital inflow and in discouraging same, by triggering off or exacerbating inflation. Depending on which one of the two becomes dominant, the effect of exchange rate alignment on foreign investment would have been clarified.

The need to stem inflationary tendencies to encourage foreign direct investment is perhaps only paralleled by an equally compelling need to address, in a fundamental manner, the Country's external debt burden. Huge debt overhang is a strong disincentive to foreign capital inflows.

Developing countries, like Nigeria, are highly indebted and their ability to settle these debts is often questioned. The Structural Adjustment Programme (SAP), which is designed to restructure and stimulate the growth of investment in Nigeria, has had successes and reversals; Foreign investment inflow is far less than anticipated. Yet, more than ever before, the growth of foreign investment as a stabilising and complementary force to domestic investment is critical. Nigeria's current focus on foreign investment promotion attests to this critical importance.

There is urgent need to rectify the structural defects in the Nigerian socio-political and economic framework which are strong enough to discourage foreign investors. In Nigeria,

there is urgent need to solve problems such as inadequate and deplorable state of the socio and physical infrastructure. Poor or inadequately provided roads, delays or bottlenecks in shipping and receiving goods, delays at the ports, faulty telephones and other telecommunication facilities constitute serious impediments to smooth business exchanges. Potential investors would generally be mindful of the state of infrastructural facilities and where they are poor, the degree of government commitment to reverse the situation.

In the situation Nigeria finds itself,it is probably illusory to expect a vigorous inflow of foreign private investment until Nigeria has been able to agree with its official bilateral creditors on a plan for regular debt service. Also, there are needs for improved macro economic policy, public expenditure restructuring, privatisation and transparency in the management of public resources. These are not, of course easy tasks but they are not beyond the capacity of a dynamic and entrepreneurial society.

The need to ensure political stability appears all too obvious, hardly requiring underscoring. And here, the options facing the government are clear: promote equitable economic growth and foster national integration. New foreign investment are only likely to come to a country that provides a climate conducive to profit and devoid of encoumberances to

entrepreneurial initiatives.

Also, over the years, at least up to 1988, when the industrial policy guidelines were introduced, the institutional arrangements to facilitate the inflow of foreign investment had been rather unsatisfactory. Foreign investors had to go through tortuous, time consuming and costly procedures before obtaining the mandatory business permits required for company incorporation; obtain approvals for expatriate quota, pioneer status, and secure technical and management agreements and approved-user status. These had to be processed in different government ministries and agencies. The experience of paying frequent visits to relevant ministries with overlapping jurisdictions in the administration of the incentives and regulatory framework, no doubt discouraged foreign investment inflow. Also, discretionary powers, ambiguities and in some cases, anachronistic provisions characterised the legislation governing foreign investments.

The major strategies adopted by the government to overcome these problems included:

- the establishment of an Industrial Development Co-ordinating Committee (IDCC) now transformed into Nigerian Investment Promotion Commission (NIPC) as a one stop port of call for foreign investors directed at eliminating

obstacles to foreeign investments;

- the restructuring and streamlining of the incentive policies on foreign investment as indicated in the Industrial Policy documents;
- the adoption of privatisation and commercialisation programme;
- placing of emphasis on non-oil export stimulation and expansion;
- the shift in macroeconomic management in favour of liberalisation, deregulation and market based arrangements.

Each of these components of the new industrial investment strategy is capable of producing a positive impact on the flow of foreign investment given transparency, sustained pursuit of technical sound and realistic policies and government fiscal discipline. These attributes have to be entrenched and sustained in the medium to long-term in order to re-assure foreign investors that there will be no return to the past control measures and that the decision to adopt stable deregulatory macroeconomic policies would continue to be adhered to. The cautious nature of investment decisions also necessitates the sustained and faithful implementation of each aspect of the investment policy so that foreign investors could be persuaded to come in.

It is important to say that private foreign investment movements in a globalised economy should not be restrained. What is important is for the country, through appropriate policies to create an enabling environment for a sustained inflow. Specifically, macroeconomic stability should be achieved through a well focused synchronisation of monetary and fiscal policies. As is expected that in the twenty first century, the movement of private foreign investment across national borders would intensify, to areas of highest reward, Nigeria should not be left behind in this trend.

Bureaucratic delays and indecision are commonplace in Nigeria as elsewhere in the developing world. The approval of initial request to invest in the country could take years, as could obtaining licenses to import and export products, seeking permission to hire and fire workers, obtaining permission to fix and raise prices. Due to administrative bottlenecks and lengthy protocols the processing of those requests may stretch interminably.

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Appendix

Summary of Foreign Investment Policies in Nigeria

Period	Policy/Legislation	Incentives/Strategies
Colonial period (1930-1959)	Laissez-faire regarding multinationals. Absence of government regulations. Industrial Development (Income Tax Relief) Act, 1958; Industrial Dev. (Import Duties Relief) Act, 1957; Custom Duties (Dumped and Subsidised Goods) Act, 1958; Customs Drawback) Regulations 1959; Income Tax Amendment Act, 1959.	Freedom to repatriate at will profits, dividends, and capital; availability of government assistance in obtaining land and factory site; tariff protection for industries; protracted tax holidays; accelerated depreciation of capital.
Post-Colonial period (1960-1985)	Some government regulation and control; some policies discouraged FPI. Companies Tax Act; 1961; Exchange Control Act, 1962; Immigration Act, 1963; Indigenisation Decree 1972; Decree No. 3 of 1977.	Generous capital allowance. (depreciation claim with no limit; tax rebates in respect of losses(before April 1976); later claims were limited to four years but indefinite carry forward of losses for agric business. Permission was required for transfer of profits, repatriation of capital and new foreign borrowing; compensation deals to retain some proportion of foreign exchange not needed for local expenditure abroad. Indigenisation Act reserved some businesses for foreigners and some for Nigerians.
SAP Period (1986-1993)	Deregulated and liberalised policy. New Industrial Policy 1981; Companies and Allied Matters Decree, 1990.	Financial liberalisation; removal of price controls de-capping of interest rate; abolished the indigenisation Act. Foreigners were free to invest in all aspects of their economy; availability of an industrial development blueprint; establishment of the Industrial Dev. Co-ordinating Committee (IDCC).
Post SAP Period (1993-1996)	Guided de-regulation. Some policy reversals on SAP; Nigerian Investment Promotion Commission Decree, 1995; Foreign Exchange (Monitoring and Misc. Provisions) Decree, 1995.	Unconditional transferability of funds; no enterprise shall be nationalised or expropriated by any government. Foreigners cannot be compelled to surrender their interest in any company; establishment of the autonomous foreign exchange market.

Source: CBN Economic and Financial Review. Various issues (1980 - 1997).