

**THE RELATIONSHIP BETWEEN NIGERIAN GROSS DOMESTIC  
PRODUCT AND FINANCIAL INVESTMENT IN THE TRANSPORT, UTILITY,  
CONSTRUCTION AND REAL SECTORS  
(1990-2009)**

Nigerian development depends much on the construction to improve its value. The aim of this research is to examine the relationship of building and construction sector on Gross Domestic Product and other related sector of the economy. The real sectors that generate the bulk of construction suffer government negligence due to lack of steady GDP in measuring the performance of these sectors. The objective of this research is to determine the relationship existing between building and construction sector against real sector and GDP against real sector. The research assumed that the sector studied have a substantial input on building and construction, and there was a continuity in government over the period of study, social, political, government policy and the stability throughout the period. Data was collected from Central Bank of Nigeria statistical bulletin 2009 of gross domestic product prices in millions of Naira (1990 -2009). The data obtained was analysed by Simple linear regression analysis and the trend over time. Conclusion were drawn, the first experiment between construction and six sectors of the economy tested positive with low  $R^2$  value ranging from 2% - 4%. Construction and other sectors of economy measured against GDP ranging from 9% to 95%. Finally the multiple regression ranges between 59-95%. Recommendation were made due to the low level of  $R^2$  values of construction against the real sectors and the GDP against construction and the trends over time is not static, it fluctuates with time. That provides cause for worry, efforts should be made to improve the low level of  $R^2$  value to a significant level by government prioritising the construction sector since the industry forms a foundation for development of any nation. Further studies could be carried out of periods between (1990 – 1999) ten years military regime and (2000 – 2009) ten years civilian regime in other to form a basis for comparison. Federal ministry of finance should consider the dollar value to form a basis for budget preparation and resources planning.

## **CHAPTER ONE**

### **1.0 INTRODUCTION**

#### **1.1 Background of the study**

The construction and building industry plays an essential role in the socio-economic development of a country. The activities of the industry have great significance to the achievement of national socio-economic development goals of providing infrastructures, sanctuary and employment. It includes hospitals, schools, townships, offices, houses and others; urban infrastructure (including water supply, sewage, drainage) highways, roads, ports, railways, airports, power system, irrigation and agricultural system, telecommunication. It deals with all economic activities directed to the creation, renovation, repair or extension of fixed assets in form of buildings, land improvement of an engineering nature.

Besides, building and construction, the industry generates substantial employment and provides a growth impetus to other sectors through backward and forward linkages. It is essential therefore that. These economic development is nurtured for the health growth of the economic increase or alternatively did economic expansion strongly contribute to construction growth instead. Building and construction sector are considered to be one of the major sources of economic growth, development and economic activities. It can be regarded as a mechanism of generating the employment and offering job opportunity to millions of unskilled, semi-skilled work force. It also plays key role in generating income in both formal and informal sector. According to federal office of statistic that, building and construction sector is one of the most neglected sectors in Nigeria. Although the construction sector has less than 1.% share in the GDP of the nation from (1999 – 2009).

(Fajana 1975; Fadupe and William, 1985) stated that the Building and construction sector in any nation are considered as a major indication in the growth of the Nation, both in economic and social terms. The quality of public services delivery, including utility and infrastructure services, remains low in recent times, undermining Nigerian competitiveness. Until recently, much of federal government Spending remains outside the budget process. The control mechanism have been incapable of halting unauthorized extra budgetary spending for political and non-productive programmes. Society's goals are multi-varied and often contradictory and yet the resources and means of meeting them are limited both in size and the range of instrument available within any feasible period.

### **1.1.1 The Nigeria Economy**

The Nigerian economy has witnessed a lot of economic crises that had to do with its management. Such economic problems arose because of over dependence of the economy on oil, the oil glut, balance of payment deficits, and its drain in reserves, low productivity of all sectors of the economy, inflationary pressure, unemployment and smuggling. Therefore the building and construction could be seen as one of the components for the measuring of the gross domestic product of a country, as such whatever affects the industry will automatically affects the GDP. Base on the world bank publication of 2008 the building and construction industry – issues and strategies in the developing countries has it that some 44% of the total cost of project approved for assistance by the world bank and its affiliate goes for construction works. However, there is need to create awareness in buildings profession due to increase in demand in construction maintenance of building and both public and private sector as these could be achieved by managing construction resource like material, labour plant money effectively.

A lot had been done in the field of management of site resources employing various technique of management such as bar-chart, critical part analysis, S-graphs, cost ceiling systems, budgetary control techniques and the use of computer in resource management yet not much have been done in the field of cost data of site resources to provide some form of guide lines for cost planning, prediction and seasoned scientific advice to government officers.

## **1.2 Significance of the period under Review (1990 – 2009)**

Despite the availability of national resources, population, and domestic markets, all sectors of the Nigeria economy performed below their potential during the period of this study (1990 - 2009). The economy remained stagnant (unchanged and over –dependent on the oil sector. The largely subsistent agricultural sector failed to keep up with rapid population growth, forcing the one-time food exporter to import food, inter-sectorial linkages remain weak and the rate of unemployment remain high and problematic. Most observers of the Nigeria scene-domestic as well as foreign-attribute the poor performance and the oil sector to a variety of reasons. Management, inadequate infrastructure, and non-properly budgetary implementation. November 1996, the military ruler Abacha set up a committee which looked into the various sectors of the economy including construction sector, which was first on the list, no tangible progress has so far been made. The Nigeria economy has a truncated history. In the period 1990 – 2009 the Gross Domestic Product (GDP) recorded 3.1% during the oil boom. Agriculture has suffered from years of mismanagement in consistent and poorly conceived government policies, and the lack of basic infrastructure. Still, the sector accounts for over 26.8% of GDP and two thirds of employment in Nigeria is no longer a major exporter of Cocoa, groundnut, (peanuts), Rubber and palm oil etc., Nigeria land tenure system does not encourage long-term investment in technology or modern production ([www.worldbank.com](http://www.worldbank.com)).

Agriculture has failed to keep pace with Nigeria rapid population growth, so that the country, which once exported food, now relies on import to sustain itself. The oil boom of the 1970s led Industry Nigerian to neglect its strong agricultural and light manufacturing basis in a favour of an unhealthy dependence on crude oil. In 2000, oil and gas exports accounted for more than 98% of export earnings and about 83% of federal government revenue new oil wealth, the concurrent decline of other economic sectors and a lurch toward a statistical economic model fueled massive migration to the cities and led to increasingly widespread poverty, especially in rural areas. A collapse of basic infrastructure and social services. Service & communication, transport, utilities low power and telecom density has crippled the growth of this sector. World bank (2008) statistical Bulletin Vetica Research .

### **1.3 Aim**

To examine the Relationship of building and construction sector- on Gross domestic products and the real sectors on the Nigerian Economy.

### **1.4 Objective**

Based on the aim stated above the following are the objectives of the study

1. To determine the relationship between construction and the real sectors.
2. To determine the investment trends in the real sectors
3. To determine the Relationship between GDP and the real sectors
4. To determine the trends in GDP over the years..

### **1.5 Statement of the Problem**

The research problem of this study is concerned with the identification of the interrelationship that exist between the building and construction and other related sectors of the economy that are responsible for domestic production over time. Construction related Sectors that generate the bulk of construction have suffered government neglect.

Interdependence between the building and construction sector and other related sectors need to be properly studied, understood and new trend in order to enhance the performance of the Nations Gross Domestic Products.

### **1.6 Need for The Study**

The re-orientation and re-ordering of government public fiscal policies in a way that acknowledge the relative importance of sectors based on their contribution to the GDP will address most of the problems that plague the construction industry today. Such re-orientation will engender allocative efficiency in the system. To accomplish such re-orientation however, knowledge of the various interrelationship that exist between sectors of the national economy responsible for domestic production in Nigeria is an essential sine qua non. This study is concerned with the establishment of the magnitude of the degree of influence of economic sectors on the totality of domestic output in the country as measured by GDP.

### **1.7 Pilot Survey**

A pilot survey was undertaken. The survey sought to establish the relationship and contribution of building and construction to eight activity sector – industry, Agric, health, Real-estate, education, utilities, communication and transportation, and the relationship exist between GDP and the nine sector of the economy-building construction, industry, agric, health, real-estate, education, utilities, communication and transportation.

The data were obtained from Central Bank of Nigeria Statistical bulletin 2009. Values in naira terms and naira dollar value for over 20 years period (1990 – 2009) were used. Simple linear regression and analysis of variance (Anova) were employed as statistical tools. The result of the experiment is displayed.

Experiment 1 – 8 all had positive correlation  $R^2$  for all the experiments were also generally very high between 69 -98% and experiment 9 and 17 had positive correlation  $R^2$  values of the f-calculated exceed those of the f-tabulated.

Inference were drawn that as the GDP rise so also the contribution of the sectors to the GDP rises, and as building and construction rises so also the contribution of their sector of the economy rises. Statistically significant relationship thus existed between building and construction and the dependent variables tested namely: real estate, utilities, transportation, communication, industry, health and agriculture. And statistically significant relationship exist between GDP and the dependent variable tested namely building and construction real- estate, utilities, transportation, communication, industry, health, agriculture.

However, there was need for further experiment and survey to ascertain the true picture of the study and what is really obtainable at the present times; the following questions were deduce.

The existing data of Gross Domestic Product of selected sectors from 1990 – 2009 were used for the analysis which shows that all the  $R^2$  value were significantly high ranging from 57 – 99%. Therefore if the same data is converted and expressed in dollar values and the same experiments is conducted, what will be the nature of the relationship.

## SUMMARY OF PILOT SURVEY RESULTS

### RESEARCH ANALYSIS

Analysis No	Variable		Model	Regression Equation	R <sup>2</sup> %	F <sub>tab</sub>	F <sub>cal</sub>	Strength of Relationship	Remark
	X Independent	Y dependent							
1	Total GDP	Building & construction	Linear	Y= 1188580 +70x	98	8.29	1218	Strong	SS
2	✓	Real Estate	✓	Y=794022 +22k	99	8.29	1930	Strong	SS
3	✓	Utilities	✓	Y=868145 +409x	97	8.29	556	Strong	SS
4	✓	Transportation	✓	Y=907914 +31x	59	8.29	26	Strong	SS
5	✓	Industry	✓	Y = 449322 +2.66x	86	8.29	116	Strong	SS
6	✓	Agriculture	✓	Y = -5699 +2.88x	85	8.29	1054	Strong	SS
7	Bldrs constr	Industry	✓	Y = 8412 + 0.04x	85	8.29	104	Strong	SS
8.	✓	Real Estate	✓	Y=-4197 +0.31x	99	8.29	1438	Strong	SS
9	✓	Utilities	✓	Y=-21101 +5.67x	95	8.29	306	Strong	SS
10.	✓	Transport	✓	Y=-6197 + 0.43x	57	8.29	24	Strong	SS
11	✓	Agric	✓	Y=-13394 +0.04x	94	8.29	304	Strong	SS

Source: Authors Anlysis of Data (Regression analysis)>

## **1.8 The Hypothesis**

In order to answer this question put forward by the pilot survey, the following hypothesis were formulated.

HO<sub>1</sub>: There is no significant Relationship between changes in GDP and changes in the investment of the real sectors.

HO<sub>2</sub>: There is no significant Relationship between changes in constructions and changes in the real sectors

## **1.9 Scope and Limitation**

1. The study covers Gross Domestic Product at current basic prices within Nigeria only.
2. The study focuses only on the contribution of buildings and construction sector to other related sectors of the economy namely real estate, utilities, transport, industry.
3. The study is applicable only within the stated time frame of 20 years period (1990 – 2009).

## **1.10 The study area (History of Nigeria)**

Nigeria is situated in West Africa on the Gulf of Guinea and bounded by the countries of Cameroun in the Southeast, Chad to the Northeast, Niger to the North and Benin to West. These boundaries are relatively recent creation. In spite of hill, rivers and plateau there are no natural boundaries, apart from the Atlantic Ocean to the south. However, the terrain is often difficult, with forest and swamps in the southern zone, thus, rivers and their tributaries form the natural arteries of communication.

Nigeria is at present the most populous nation in Africa and has long been one of the most prominent in terms of culture and civilization. At various times in its history it has been the site of civilization counted among the most powerful and prosperous of the continent with a consequent flowering of art and sophisticated workmanship in many fields.

Nigeria is a Federal republic, with thirty six states, having once been part of the British Colony in Africa it now participates as an independent and very important partner in the commonwealth. The present capital is Abuja, Which is more centrally placed within the country. Nigeria ranks as on of the most populous nation in the world summarily as seen from the forgoing, GDP is one of the most frequently used measures of economic performance or development and major change in the GDP of the nation may in fact reflect severe problems or impressive gains.

Similarly, the building construction industry is an essential sector contributing to the process of development of an economy. The products from this sector such as roads, irrigation works, schools, houses, hospital, factories and other contraction works are the very foundation on which development efforts and improved standard of living are established. The other sector of the economy depends largely on the construction industry to improve efficiency and productivity.

Therefore, the role of the GDP and building construction industry to the nation's economic development can be over emphasized.

### **1.11 Assumptions of the Study**

1. There was continuity in government over the period studied social, political government policy were stable throughout the study period

2. The sectors studied are assumed to have a substantial inputs on building and construction and naira dollar value is considered on each year.
3. Change in macro-economic factors over the study period were assumed not to have any significant effects on the study.
4. Data from Central Bank of Nigeria is reliably accurate

### **1.13 Summary of Chapter One**

This chapter has looked at the Analysis of Relationship between trends and GDP in investment on real sectors in Nigeria economy 1990 – 2009). The objectives of this research study has therefore been to quantify the relationship between the real sector of the economy i.e building and construction, industry, agric, real-estate, utilities and transportation to the total GDP of the country. To also determine the relationship of building and construction sector to the real sectors of the economy i.e industry, agric, real-estate, utilities and transportation. The demand for construction projects is related to the level of domestic output and affected by the performance of the economic sectors of any country. Such performance is usually measured by analysis of the contribution of the sectors to the national economy. The construction industry usually account for between 3% and 8% of a developing country's gross domestic product (GDP). About one-half of the gross fixed capital formation takes the form of construction output.

The data was collected from Central Bank of Nigeria Statistical bulleting 2009 and Federal Office of Statistics. The Gross Domestic Product (GDP) is an important measure of an economy's performance. It measures the total output of all productive sector within a country over a specified period, usually one year, when output grows, it is very probable that standard of living have improved. Economics are affected by political, social, technological and economic instability and policies.

The research problem of this study is the problem of interdependence between the building and construction sector and the real sector is not static but change due to lack of proper resource planning. During the 20 years period 1990 – 2009. The study is necessitated by the need to provide some empirical guideline for cost planning project monitoring resource planning, advices to administration both in building and construction sectors and other related sectors of the economy, agric, industry, transport, utility and real-estate. The aim of these study is to examine the level of inputs of the building ad construction sector in relation to other related sectors of the economy. A pilot survey was carried out in order to identify particular areas to be tested, inferences were drawn from the pilot survey that as the building and construction sector rise, so also the other related sectors of the economy rises and as the GDP rises so also building and construction sector and other related sector raises.

The study was limited to Gross Domestic Product in Nigeria and with 20 years period of 1990 – 2009. Only the gross domestic products of these sectors considered Agric, utilities, transport, real-estate, industry and building and construction. The study assumed that the sectors studied are assumed to have a substantial inputs on building and construction sector.

Data on all the above were obtained from Central Bank Statistical bulletin 2009, Federal Office of Statistics, Abuja. The study employed both descriptive and simple regressive analysis. Statistical inferences were drawn from the result (i) regression analysis.

## **CHAPTER TWO**

### **REVIEW OF RELATED LITERATURE**

#### **2.1 Introduction**

This review of literature covers all of the components of the hypothesis. These included building & construction, industry, agric, real estate, transportation and utilities sectors. A summary of findings as well as a summary of the chapter was included at the end.

#### **2.2 The Building and Construction Sector in Nigeria**

Construction projects are found in every sector of economic and social activity, such as roads, bridges, housing, education, medical and social infrastructural facilities, power generation and distribution facilities, mining and processing facilities, Agricultural product processing etc., Construction projects are frequently employed by governments to serve a variety of uses such providing a sense of belonging for the citizenry, providing full employment, generating revenue, securing and improved balance of payments situation, controlling inflation and raising standards of living. Construction projects tend to be of a durable nature, such as highways or flood control projects. Engineering project make up a large percentage of the total volume of constructions project in Nigeria. The amount budgeted for roads, an aspect of engineering projects, in the third national development plan period (1975-80) was 5.4 billion naira; in the first plan period (1962-68), the transportation and power sub sectors took 37% of total allocations; (Hillebrandt, 1974).

According to Hillebrandt, 1974 that the building and construction industry in Nigeria exists in an environment that is less under the control of its operators than most other industries, furthermore, Hillebrandt 1974, Butlar 1972 states that the industry resembles

and assembly rather a manufacturing industry. In Nigeria, the industry employed about a quarter of the registered work force in the 1960s. the products of construction are large. Heavy and expensive, construction utilizes a great deal of product of other industries that are manufactured elsewhere. Resources employed by construction include materials, labour, plant, and time Construction involves a lot of repetitive operations, performed in sequential manner. The complexities of managing construction are reflected in the forms of contracts adopted by the industry. In Nigeria, however, construction has come to have a reputation as an avenue to siphon public money.

The building and construction industry in Nigeria undertakes three types of construction:-

- (i) Building construction
- (ii) civil engineering construction, and
- (iii) heavy/industrial construction. (Talbot, 1976; Stone, 1976).

### **2.2.1 Contributions of Building and Construction to National Economies.**

The uniqueness of construction products stems from the fact that they are (i) heavy, large and expensive, (ii) are required over a wide geographical area, (iii) are usually made-to-order for each customer, and (iv) contain a large number of components manufactured elsewhere by other industries. Modern day construction is an economic activity. In the developing world construction accounts for about 40-70% OF the gross fixed capital formation (GFCF) while housing, a subsection, of construction, accounts for about 2-8% of the gross national product (GNP). The Construction industry in Nigeria employs about 25% of the total registered labour force and is frequently used as a regulator of economic activity by governments, (Hildebrandt 1974).

Construction activities also serve as income redistribution and have a multiplier effect on the general economy. In certain cases, such as low-income housing projects, the total value of backward linkages, (demand created in other sectors of the national economy) exceeds 50% of the actual value of the construction; and transportation sectors, (Olayide, 1976 *et al*, 1988; ILO, 1995).

Resources utilized by construction include materials, labour, plant money (capital), energy and time. Materials for construction may be raw (unprocessed), semi-processed or fully processed, and this fact determines the type and nature of other resources required. One-half of total construction costs are attributable to material costs. Labour costs form about 40% of construction costs, allowing for project variation. Modern construction activities entail on-site assembly more than production, and the attainment of preset quality standards necessitate the automation of factory production processes. Special plant are used on novel e.g tunneling almost as much as standard equipment (World bank (2009) World bank data base vetica Research).

### **2.2.2 Effects of Economic policies on the Nigeria building and construction sector.**

The imposition of statutory controls on construction is not new; in Britain, legislation fiscal control and management policies. By controlling the volume of construction work government hope to achieve (i) full employment, (ii) low inflation (iii) budgetary surpluses, and (iv) a healthy balance of payment position Economic policies of government usually affect construction primarily in the area of financing. Government financing of public construction projects may be undertaken in several ways. Some of these are, (i) direct payment from taxes, (ii) loans without interest, (iii) loans at low interest, (iv) self-liquidating bonds, (v) indirect subsidies, and guarantee of private loans. The federal government of Nigeria has accounted for virtually the total cost of

construction of existing engineering projects, albeit with heavy doses of foreign capital. The federal government might be preparing to divest itself of this role, as the move toward the privatization of government owned corporation gets into top gear. This process will mean that primary sources of work for the private sector both in terms of number of firms, control hierarchy and expenditure on construction by individual firms serious implication for the building and construction sector. One direct result that can be expected might be an increase in the cost of work acquisition (World Bank (2007) [www.worldbank.com](http://www.worldbank.com)).

Almost all policies of government have economic implication. The control that government exerts over the housing market in the setting of interest for housing loans and mortgages, and the stipulation of specific of operating capital of bank to be set aside for landing to house developers. The trend by government departments to employ their own workforces to carry out construction and maintenance works mean that professional consulting and contracting firms are shut out, (Olowo-Okere 1980,)

When government adopt more transparent methods of contractor selection, such as open tendering, construction work tends to concentrate in the hands of a few very competent contractors. The backlash of this is that such competent contractors mostly foreign firms. When abuse of the selective tendering process has occurred incidences of corrupt practices an shaddy work has resulted (Olateju 1990).

Periods of reduce expenditure by government on construction might encourage the adoption of private sector financing in pure or hybrid forms. Well-publicized examples are BOT (build operate and transfer) and BOO (build operate and own) projects. Private sector companies (including construction companies) become responsible for project promotion (including feasibility studies, project finance, design construction and

operation). Significant financial pressure is thus shouldered by building and construction sector.

The economic influence of government is strongly felt on both sides of the supply and demand divide in construction. This is particularly the case in civil construction where the rules for marketing and contractual relationship are usually laid down by the government. Building construction is less subjected to government's influence since a considerable part of its demand arises in the private sector. It is, however subject to their forms of action by the and legislation affecting licenses and permits, and building codes, minimum wages, corporate taxes, rules on the importation of materials and spare parts, and the terms and f availability of financing for construction.

Government actions have economic undertones that affect the construction industry most directly at the micro economic level. Poor planning and execution of public sector projects frequently exacerbate the severe fluctuation in the demand for construction poor planning and execution can to the inefficient use of construction equipment, which may be made to lie idle, (world bank, 1986).

The seasonal and cyclical nature of demand as well as instability due to change in government and also in development policy can be reduced through conscious effort. Nevertheless, a variety of measures has been used or considered to achieve this objective. One way is even out demand emanate from the government by planning its work program better, or by counter cyclical phasing, and program the implement of project after taking into account the aggregate construction demand from all ministries as well as construction capacity of the industry.

### 2.3 The Construction Industry

Construction industry makes a noticeable contribution to the economic output of a country; it generates employment and income for the people (field and ofori, 1988). The effect of change in the construction industry on the economy occurs at all levels. According to (Hillebradt, 2000) and in virtually all aspects of life (Hillebradt, 1984).

The construction industry which is responsible for the provision of capital project comprises of building and civil engineering work which undertakes the provision and maintenance of civil work such as road, railways, harbours etc. The bulk of these two interrelated sub sectors that makes up the entire construction industry are known to be the largest employer of labour in both the private and public sectors of the Nigeria economy. The construction sector is crucial part of any economy because of both its size and the potential role it can play in the development effort of that economy. One of the most important economic features is that it fertilities that are necessary for production and distribution of all other goods and services, (well 1990).

The relationship between a country's state of development and the level of activity in the construction sector is one, which has been subject of study at the macroeconomic level for number of years of (Turin, 1973; World bank, 1984, Well 1987 Bon 1990). Olaloku (1987) claims it contributed an average of 5% to the gross domestic and average of about one –third of the total fixed capital investment. This is comparable with the contribution of construction industry with the develop countries of the world. According to Pietroforle and Gregori (2003, pg 30) “The construction industry of the following develop countries, Canada, France, USA, Japan Germany at 1990, contributed 13% 6% 11% 17% 9% respectively to their gross domestic formation” However, despite this significant role the industry plays in reshaping the economy and its substantial work force, the construction performance of the industry in Nigeria has not been impressive. This evident from the option of Fegebele tal (204, pg 899) who affirms that “most empared studies revealed that

the output of the industry is quite low when compared with the construction industry of many developing countries on the imported input such as construction materials, machineries and skilled manpower.

The importance of construction industry stems from its strong linkages with other sectors of the economy (World Bank, 1984) in the view of Chan (2001), construction is a most that is sensitive to changes in both fiscal and monetary disturbances. This is because at times to be financed through loan facilities, changes in interest money supply, for construction resources and need availability will affect the cost and ease of borrowing, hence construction output.

The distinctive feature of construction industry in development countries are the heavy dependence on imported construction materials and components (chan 2002). Hilebradt (1984) posited the construction activities generate demand for raw, semi- processed and processed materials. There however, exist a close association, between construction, the manufacturing sector. In the opinion of Punwani (1997), construction projects are dependent open loan financing as there is a close linkage between construction and financial operation within the economy. The construction industry also generates income through the sale of its products, the purchase of input and the creation of jobs.

Chan (2001) saw construction industry as a sector that is sensitive to change in both fiscal and monetary and needs to be financed through loan facilities.

According to Akintunde (1992). The history of construction in Nigeria has not received a fair share of attention while Ofeogbu (1998) viewed the industry as being important, thus, with the boom, importation of building materials averaged about N2 billion annually as the nation's preference for foreign goods increased.

### **2.3.1 The concept of gross domestic products**

Domnick and Edward 1997) also stated that the Gross Domestic Product (GDP) is an important measure of an economy's performance. It measures the total output of all productive sectors within a country over a specified period. Usually one year. When output grows, it is very probable that standard of living have improved too. A time series plot of the GDP will correspond with the economic history of the nation, and periods of economic shock will be easily discernible.

The gross domestic product (GDP) being the value of all goods and services produced in a country within a given period includes the factor income of all residents in the country, including foreigners who often have very high factor incomes. For developing countries like Nigeria, much of the capital investment is by foreigners. Such investments are disproportionately large compared to indigenous investment. The gross domestic productive thus fails to indicate adequately the actual state of the development of the indigenous company, (Okwusa, 1976).

### **2.3.2 The role of building and construction in economic development**

The building and construction industry is an essential or important sector for the process of development of any sector.

Lean and Goodall (1983) explained that, the construction industry covers a wide range of loosely integrated group and organization involved in the production, renewal, alternation, repair and maintenance of certain capital goods. These capital goods, whether building or civil engineering works, are produced by combining land with a variety of raw materials and semi-processed components. The only difference between this type of

production and others is that production takes place at the site where the product is to be used rather than in a factory.

The above is in consonant with the definition of Harvey (1985), the construction industry covers erection, repairs and demolition of all types of building and civil engineering structure, specialist subcontracting trades, such as asphaltting, electrical wiring, flooring, plastering, roofing and plumbing as well as the hiring of construction plant and scaffolding.

The products from the building construction industry such as roads, dams, irrigation works, schools, houses, hospital, factories and other construction works are the very foundation on which development efforts and improved living standard are established. The other sectors of the economy depend largely on the construction industry to improve efficiency and productivity.

The construction industry has two main classes of product. One is building which is connected with housing, offices, hospitals, factories. The other is civil works involving the infrastructures of water supply, transport, irrigation, power generation.

The world bank report on construction industry (1986) noted that the two classes constitute 60% of building and construction works while civil works account for 30% and that products from the construction industry are vital to the well-being and functioning of a modern economy. The industry provides the houses, bungalows and flats we live in, the factories, warehouses and office we work in, the shops, schools, restaurants, hospital, filling station, roads and many other facilities we use. Private organization as well as various government authorities need these products. The building construction sector helps in the actualization of government policies.

For instance, in Nigeria, the physical manifestation of the educational policy of the Shagari, administration to establish Federal university of Technology in some states of the federation, became actualized through the construction of several building. Federal University of Technology Minna is one of such universities. The provision of these infrastructures have made it possible for thousand of high level manpower to be trained and services other sectors of the economy.

World Bank reported that the construction industry has been ranked among the top four out of twenty economic sectors in terms of intersectoral linkages. The proportion of the labour force employed in the building construction sector and the contribution it makes to the gross nation product is very significant. Annual abstract of statistic by Federal Office of the Statistics, revealed that, only three hundred and ten construction and building firms, the total labour force employed was 59,167 for the year 1984. This shows an appreciable level of employment within an economy and also as an agent of development, the building construction industry is enhanced by its ability to provide gainful employment for a large number of workers.

Furthermore, the importance of the building construction industry is best reflected by its contribution to the gross fixed capital formation. Table 1.2 shows the contribution in percentage, of the building construction industry to the gross capital formation from 1987 – 1996 in Nigeria.

**Table 2.1:** construction industry contribution to gross capital formation (1987 – 1996)

Gross capital formation	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Construction /Building	4.76	4.54	4.34	4.21	4.19	4.22	4.30	4.38	4.40	4.35
	%	%	%	%	%	%	%	%	%	%

**Sources:** Federal office of Statistics (Digest of Statistic December, 1996)

The demand for constructional activity is governed by the general level of economic activity and by government policy in relation to the social services and to capital investment.

Seeley (1996) observed that demand in the industry could be categorized into commercial, industrial and social, depending on the policy. Fluctuations in construction demand affect the economy in various ways; it affects the demand for labour and materials as well as the lag in the time taken to supply the industry output.

When there is a government policy on maintenance culture then the demand placed on the industry will be that of maintenance. Other factors that could affect demand may be as result of population growth, immigration and change in income. Which ever helps to develop the industry. Conclusively, Pugh (1994) Submitted that the content of the building construction sector development can be viewed coordinated networks of markets in construction; in trading, in building materials, in finance, in professional services and so on. The building sector is importance in the overall economy. Contributing to income and employment and itself can be affected by macro-economic conditions.

### **2.3.3 The Role of GDP in Economic Development**

The Gross Domestic Product (GDP) is one of the most frequently used measured of economic performance or development. Any major changes in the GDP of the nation may in fact reflect severe problems or impressive gains. Dominick and Edward (1997) Defined economic development as the process whereby a country's real per capita gross national product (GNP) or income increases over a sustained period of time through continuing increases in per capital productivity.

Berkey (1980) Explained that growth or development occurs when the amount, which can be produced and consumed per head of the population increases. Productive capacity is the output, measured per head of the population increases. Productive resources are fully employed Although he added that the full employment qualification is often dropped and growth is taken as the change in GDP per head, after allowing for changes in the value of money.

From the forgoing it then follows that increase in the GDP figures means progress for the nation and the populace According to Wonnacott and Wonnacott (1982), the more the growth the bigger the income of workers and higher standard of living.

In comparing the standard of living of different nations, the Gross Domestic Product figures have is usefulness, although the yardstick for measuring or comparing the standard of living of countries and people within a country is different. Growth is measured in different ways, firstly it is an increase in real gross domestic or national product and secondly is also measured as the increase in gross national product per capita. Both scales have their usefulness in an economic planning depending on the comparison one is interest in economic planners make reference to GDP per when assessing the economic productivity of a nation and the rate of growth of total output. Alternatively if one wants to determine the living standard of nations GDP per capita becomes the basis for comparison and not necessarily the GDP figures. Thus one can say that a country is economically much more powerful than the other but the other has a higher standard of living.

Harvey (1986) continued that when GDP is used to compare the standard of living of different countries, GDP figures must be subjected to qualifications additional to those of price changes, population increase etc.

In Nigeria for instance, World Bank reports on poverty and in Nigeria (1997) noted that low standard of living is widespread and severe. Using the most recent poverty indicators such as illiteracy, access to safe water and the number of poor people, Nigeria remarks blow Kenya, Ghana, and Zambia. Nigeria's GDP per capita is also lower while purchasing power continues to decline with high inflation and increasing incomes inequality Nigeria GNP capita as at 1995, stands at \$260.00, \$280.00, \$390.00, and \$400.00, Kenya, Ghana and Zambia respectively

The nation's income growth rate could be assessed using the GDP figures. This comparison helps the economic planners to answer the questions such as:

- i. Is the national income growing?
- ii. Is it growing as fast as it should?
- iii. Are the incomes of other countries growing faster?
- iv. Is there sufficient investment to maintain future living standards.

The GDP figures help the government in planning the economy A nation with effective and centrally planned economic system has shown the capability of rapid growth because productive resources can be directed town the building of capital. Planning in this case will involve careful computation of the macro-aggregates of gross domestic product, balance of saving and investment, allocation of resources between public and private sectors of the economy between one region and another, between urban and rural areas of the nation.

**Table 2.2: Social Indicator: Nigeria and Selected Countries**

Social indicator	Nigeria	Cote d'ivore	Ghana	Kenya	Zambia	Indonesia	China
GNP per capita 1995 (US \$)	260	660	390	280	400	980	620

**Source:** World Bank Economic and Social Database 1998

Furthermore, successful planning requires fairly accurate GDP figures upon which decisions can be based. A foreknowledge of the relative sizes of the various components of the national income will enhance comparison with records of past years. Hence the national income and expenditure record book should show, for a number of years; private and public expenditure on consumption and investment, the combination of each industry to the national product personal disposable income after tax deduction and transfers; the distribution of personal income before and after tax; the financing of investment; capital formation by sectors of the economy (Harvey, 1986).

Rapid growth in GDP and substantial poverty must be broad based, the obvious premises are removal of price distributions and deregulation of economic activities, including trade liberalization and investment in technology, and physical capital. Pricing policies, land laws, property rights, and the tax structure are vital policy instruments for construction, mining and manufacturing. Other factors crucial to high standard of living include improved access to credit, technology, building material and markets. All these will increase total output or GDP of the Nation.

## **2.4 Gross Domestic Product**

Lepsey (1989) defined gross domestic product as the value of total output actually produced in the whole economy over some period usually a year. The GDP output is measured by computing the income generated in producing it, and by computing the expenditure needed to produce it. There are three approaches employed in measuring or calculation the gross domestic product of a nation. They are the income, output and expenditure approaches.

### **2.4.1 Characteristics**

Adebo – Lawal (1982), Harvey and Ojo (1995) submitted the following peculiar characteristics of the gross domestic product or national income accounting.

- a. Gross domestic product figures or National income values do not currently measure human welfare because hazards of development like pollution, urban congestion are not taken into account in the compilation of the figures. Also many things which contribute to human welfare are omitted from the figures. Leisure and shorter to working week may make people happier, but will reduce the GDP.
- b. Gross domestic product statistics do not tell us anything about the distribution of income whether, the income is distributed equally or concentrated in a few hand not reflected.
- c. In underdeveloped countries, like those of West Africa, there are many self – employed people like traders and market women. Such people do not usually

keep accounts and this makes the calculation of their income difficult in computer GDP.

- d. Within the economy, there are some activities which produce goods and services and generate faster incomes but which have to be excluded from GDP calculations because their illegality, such as gambling and prostitution.
- e. The use of the value of GDP, to some extent would be limited, if prices change constantly within a period of time. For instance, if the GDP has risen by 10% between year one and the prices of materials or price level for the same period have risen by 10% in the case, the volume of production is the same for both periods, no appreciable increase output has occurred. Thus the GDP at current factor cost cannot be used as a reliable basis for comparison between two or more period, no appreciable increase output has occurred. Thus the GDP at current factor cost cannot be used as a reliable basis for comparison between two or more periods. As a consequence, the correction is made with the aid of index number or GDP Deflator, thus the GDP can be measured at constant price, eliminating the effect of changes in price.
- f. The calculation of the contribution of building and civil works to the GDP is not total while building and civil works on site are calculated to the total output, construction works especially maintenance works carried out by other industries is not included. Also, the manufacture of building components and materials, such as bricks, cement, timber, doors and windows, come under manufacturing, and quarrying gravel and sand under mining quarrying. Therefore it means that the contribution of the construction industry to GDP is the value added to the inputs of materials and services from other countries.

- g. Income from rent is usually in the GDP calculation this become difficult when the house is owned and occupied by an individual. The usually practice is that, an assumed rent figure included in the calculation for every computation
- h. One Characteristic of the GDP is that the figure are not published regularly and their reliability is in the average because the technical expertise for collection and analyzing the data is inadequate. Also the best method of measuring depreciation is very difficult.
- i. Data collection for GDP computation is of recent in same African countries. People are not willing to supply information either because they are illiterate or they think data collection is for tax purpose. This has been a major problem in research data collection in some African countries.

Therefore, from the foregoing, it must be noted that increasing the level of the GDP and the per capita income does not by itself conclusively or necessarily guarantee higher standard for the people in general. Except all the necessarily guarantee higher living standard for the people in general. Except where all the necessarily adjustment are made and factors such as, the degree of dispersion of the GDP, the value of items not included in the GDP and the harmful effects of economic progress are fully considered. Economic growth become meaningful, where there are wider dispersion of the national income among the various groupings of the society, on other hand it becomes meaningless if the rewards of the increase in the value of production go into the hands of a few.

As Adebo – Lawal finally puts it, a more equitable distribution of the nation income is a sine qua non to real economic development. He suggested that a fairer distribution of income would ensure that individual is adequately provided for.

## **2.4.2 Measurement of Gross Domestic Product**

Therefore are three approaches to the measurement of Gross Domestic Product.

These are income approach, output approach and the expenditure approach

### **2.4.3 The Income Approach**

Stone (1983) and Ojo (1995) explained this to mean measuring the income generated by production. The emphasis of this approach is the income received by factors of production and their reward for contribution to national income.

Therefore are four main components of factor income. These are rent, wages and salaries, interest and profit. Rent is the payment for the services of land and building plus royalties. Wages and salaries are the payment for the services of labor (Human resources) while interests are the payment for the services of capital. Those who lent money to the earn interest and those who own the firm earn profits. The approach however excludes payments, which are not rewards for production like transfer payment, gifts to old people etc.

The problems of existing stock of building and other structures is taken care of by valuing the correct stock of building at their current market prices, that is the prices that could currently be sold. The difference between their cost of production and their market prices then show up in the profit figures. In a situation where there is no change in real output and increase in market prices of goods (building), this will lead to error and increase in GDP figure. Valuing the GDP with a factor cost makes corrections.

A typical outlay of GDP measured with the income approach is shown below:-

Calculation of Gross Domestic Product (General Format)

Table 2.3 The income Approach

S/N	Income Item	Value
1.	Income from Employment	226.40
2.	Income from self-employment	33.00
3.	Income from rent	24.80
4.	Gross trading profit of companies	65.60
5.	Gross trading surplus of public enterprise	6.40
6.	Imputed charge for consumption of non-trading capital	3.20
7.	Total domestic income	352.40
8.	Less Stock appreciation	-4.90
9.	Gross Domestic product at factor costs (from income)	354.50
10.	Statistical discrepancy	-2.30
11.	GDP at factor cost (average estimate)	352.20

Source: National Income and Expenditure (HMSO 1998)

#### 2.4.4 The Output Approach

The output approach measures Gross Domestic Product in terms of the values added by each of the sectors of the economy. It involves adding up of the output of each firm or sector of the economy to total value of the nation's output. The output can be grouped into more or less aggregated categories corresponding to industries, sector or to any other desired category.

Adding up the value of output present two conceptual problem. The first concerns the valuation of stocks of goods produce but unsold. This problem has been dealt with in the income approach of valuing GDP.

The second problem concerns what is called double counting. This sometime arise as a result of decision taken by entrepreneur (Adebo Lawal, 1982 ).

The problem of double counting could be seen thus, when an entrepreneur or firm decides to mine iron – ore; the ore may be sold to another set of firms for use in making construction tools, the manufacturer of the tools may sell them to a wholesaler, who sells them to a retailer, who in turn finally sells them to site workers, this scenario creates a problem in the valuation of GDP

Lapse, noted that stages of production and the consequent inter-firm sales, raise a problem for measuring national income, if the market values of the sales of all firms are added up, the resulting figure or value will be greatly in excess of the value of output actually available for use. He called his kind of problem double or multiple counting. He however suggested that this kind of problem could be avoided by using a kind of problem could be avoided by using the important concept of value added. That is each firm's value added is the value of its output minus the value of the input that it purchases from other firms. Thus a steel mill's value added is the value of any other input, such as electricity and fuel oil that it buys from other firms.

**Table 2.4 The output approach**

S/N	Output item	Value
1.	Agriculture, forestry and fishing	5.90
2.	Energy and water	24.02
3.	Manufacturing	85.60
4.	Building construction	21.50
5.	Services and distribution	237.90
6.	Total domestic output	375.10
7.	Adjustment for financial services	-20.60
8.	G.D.P at factor cost	354.50
9.	Residual error	-2.30
10.	G.D.P at factor cost	352.20

Source: National Income and Expenditure (HMSO 1998)

Measurement of purchase of goods and services made in the year, not of their actual consumption that occurs during the year. Expenditure occurs all at once, when the goods are purchased, while consumption may last a lifetime. Services referred to, include the services for masons, carpenters, engineers, quantity surveyors, architectures, maids, shoes shines etc.

#### **2.4.5 Gross Private Domestic**

All purchases of capital goods, including building and equipment by private business and non-profit institutions. Gross private domestic investment also includes all expenditure for residential housing, whether rental or owner occupier (truett and truett (1987)

Investment is defined as the act of purchasing goods that are not for immediate consumption; the goods themselves are called investment goods.

Although in common speech an individual speaks of investing his money when he or she buys equity or a bond. From the national income point of view this is a transfer of ownership of an existing asset, to count an investment expenditure in national income, it must be expenditure on currently produced investment good. Then firm produces goods, which may be bought by firms, by households or by governments. The major components of investment goods are stocks, capital goods such as plants and equipment, and housing lisped (1989).

It has been argued that for investment to occur in any economy there must be propensity to save. Generally, saving arises out of that part of the income of individuals, government, companies and other agencies, and set aside for investment. It should be noted that part of saving is usually retained such as an individual or company maintaining a liquidity level to meet current expectation in expenses. Thus the amount of saving therefore may

not be equal to the amount of investment, but for the national economy at any given period, savings and investment, are equalized (Jagboro 1995c).

Summary, it should be emphasized that gross private domestic investment includes purchase of capital goods, purchased only in the country involved. Also investment expenditures include only purchases of new building and equipment, second-hand sales are omitted because they do not represent new production stocks and bond purchase constitute purely financial transactions and are not included in investment expenditures.

#### **2.4.6 Government Expenditure for Goods and Services**

Samuelson (1983) wrote that government expenditures include federal, state and local expenditure on goods and services. He added that an increase in government expenditure on goods and services would have an upward shift in the value of the GDP and GNP.

Harvey (1986) sees national or government expenditure as the total amount spent on consumer goods and services and on net additions to capital goods and stocks in the course of the year. Government expenditure could be further seen as compensation of government employees, construction expenditures for schools, highways and dam etc. transfer payments are not included in government expenditure. Transfer payments are payment between sectors of an economy for which no productive services are received in return such payments include, welfare, social security and unemployment benefits are excluded because they do not represent payment for current services received

#### **2.4.7 Net Exports**

Lewis (1976) in his measurement of national income and product wrote that not all the output of a country's business is actually sold to her citizens, some of it is sold to foreigners in their countries therefore the value of goods and services exported to other countries must be added into the GDP or GNP to measure total output. Adding the value of exports without correcting for the value of import world produce a misleading figure therefore the value of goods and services imported into the economy is subtracted from the value of export. This figure is called net export and is the amount that is actually added to GNP the value for Net export can be either a positive or a negative number (Net export=value of export-value of imports).

Trutt and Trutt (1987) explained Net export as equal to the purchase of new goods and service produced in the country by foreign, less the purchase of new foreign- produced goods by the country's residents He also agreed that value of net export could be positive or negative.

Concluding, he asserted that the sum of all these expenditure items must be equal to GDP or GNP this can be expressed in mathematical form as:

$$GDP=C+I_g+G+X_n$$

Where GDP= Gross Domestic product

C= private consumption Expenditure

I<sub>g</sub>= Gross private domestic investment

G= Government Expenditure and

X<sub>n</sub> = Net Exports

**Table 2.5 the Expenditure Approach (format)**

S/N	The Expenditure item	Value
1.	Consumer Expenditure	258.30
2.	General government final expenditure	85.80
3.	Gross domestic fixed investment	70.60
4.	Investment in stock	0.60
5.	Export (goods and services)	107.50
6.	Total Final expenditure (TFE)at market price	522.80
7.	Less imports (goods and services)	107.50
8.	Less adjustment to factor costs	62.0
9.	G.D.P at factor cost (from expenditure)	348.80
10.	Statistical Discrepancy	3.40
11.	G.D.P at factor cost (Average Expenditure)	352.20
12.	Gross national product (GNP) at factor cost	2.00
13.	Gross national product (GNP)at factor cos	354.20

Source: national income and expenditure (HMSO 1998)

#### **2.4.8 GDP Trend in Nigeria**

In Nigeria, national income accounting began in 1950, when the income expenditure and outputs methods were used to estimate the GNP since then national income statistics (figures) have been published regularly but, because of the difficulty of keeping accurate information about household expenditure especially in country areas. This approach became unpopular, although, the output method have some problems. Yet it is the most widely used in the national income accounting data (Teriba, 1980).

Estimates of the Gross Domestic (GDP) are published from time to time by the Federal office of statistics in a number of units publications, among which are the annual abstract of statistics, economic indication and the National Accounts of Nigeria. These statistics existing or expressed either at current factor cost or at constant factor cost.

#### **2.4.9 GDP Trend in some other Countries**

Today the world is divided into three main camps. First, we have the developed capitalist nations of the West otherwise referred to as the developed market economics. Into this group fall most west European and North American nations such as the USA, Britain, Canada, France, Federal Republic of Germany, Sweden, Japan, Australia and New Zealand. Secondly, we have the developed socialist nations of Eastern Europe, namely Russian, Hungary Romania etc., third world nations are alternatively referred to as developing or under developed nations, these nations are generally regarded as economically backward or under-developed. Most African nations fall under this category.

Teriba (1980) explained that national income GDP statistics provide the best single indicator of a nation's overall economic performance. He stated that Ghanaian national income has been calculated since 1955 and that the expenditure method of measurement is being employed. Ghana, Serra Leone and Gambia face the same problem that Nigeria has to face. National income measurement started in 1963 in Sierra Leone and in the 1960s in the Gambia.

It should be noted that most of the national income figures for West African Countries refer to gross domestic product rather than Gross National Product, The GNP includes net factor incomes from abroad while the GDP does not. This is because the government does not have accurate information about income from and to overseas countries.

#### **2.4.10 GDP use in planning and administration**

Teriba (1980) and Ojo (1995) highlighted the use of gross domestic product within the economy. The figure give vital information about different parts of the economy, for example, how the consumer goods sector is growing as opposed to the capital goods

sectors. The government and businessmen rely on such information to decide what changes are required.

The figures represent the performances of an economy over time. They can be useful as guide to economic planning and cost planners can use them to forecast future trends in the economy. They can also serve as indicators of national strength. Furthermore they can also be used to make a more equitable assessment of each nation to the United Nations and in distributing technical assistance and aid in an equitable way. Businessmen and individual also use the figures as inputs into their day to day economic planning and decisions.

Other measures include sound policies on interest rates and taxation, which can spread out the demand for construction. Construction tends to be undertaken when financial resources become available. The adds to inflationary pressure caused by constraints on construction capacity and shortage of materials. One possible measure that can be considered by the government to stimulate construction is the establishment of a counter cyclical credit policy, which would create a reserve fund in period of high demand to be released for investment during economic down turns.

The constraints encountered by firms operating in the building and construction sector that derive from the economy policies and/or the economic effects of other types of policies include the following:- (i) Political factors that must be overcome to achieve economic efficiency; viable engineering projects are sometimes located in unfeasible areas primarily as a result of political expediency. The Borno extension of Nigeria Railways is a case in point (ii) The structure of the Nigeria construction industry become a constraint in certain cases, foreign firms being in a domineering positing (iii) the fact that most decisions about engineering projects have been made under military regimes also posses a constraint, and this is linked to (iv) the all-pervading corruption prevalent

in the Nigeria society. (v) Finally, to all these could be added the fact that funding for most large engineering projects is sourced overseas and the terms and conditionality's could pose serious constraints.

## **2.5 Real Estate Development in Nigeria**

Real estate is the technical term used by the Federal Office of Statistics to classify those activities that have to do with buildings, their letting, leasing and sale for purpose of personal, institutional, commercial or industrial uses. The services concerned with the provision of the above functions are all grouped under real estate development. This form of building construction for purposes of profit making is fairly underdeveloped in Nigeria. Base on the reports of Federal Office of Statistics, that the estate sector contributes less to the GDP.

In terms of the national economy, real estate development draws funds from available sources within the economy for the development of durable assets, which have a long useful lifespan and fairly long payback periods. In the short run therefore, real estate development takes much from the economy and give less back. The real value of real estate lies in the value of housing as a producer good it makes the creation of other goods and services possible. At the same time, real estate development adds to the existing stock of housing and thus boosts the rate of Gross Fixed Capital Formation.

The real estate sector stands in the position of a client to the building and construction sector. Much of the workload of the building and construction sector comprises office and industrial building for real estate purposes. When the relationship between the real estate and the building and construction sector is considered in terms of number of jobs executed, the real estate sector is bound to have provided a significant proportion of those

jobs. In terms of value however, other types of construction such as civil engineering constructions for transportation purpose will predominate.

### **2.5.1 Domestic Output, Capital Formation and Real Estate Sector in Nigeria**

The domestic output of the real estate sector in Nigeria maintained a low profile over the study period. The only dramatic change in this profile occurred between 1995 and 1996, when the contribution of the sector to the GDP increased by over 1000%. The sector was adversely affected by the side effects of the Structural Adjustment Programme (SAP), and this manifested as drops in the value of the sector's contribution to the GDP over the period 1990 to 2009.

In term of capital formation, the sector consumed about 40 million naira worth of fixed capital in 1996. Which is used to add about 4.685 million naira worth of value to the economy. In the process of generation value, the real estate sector consumes only 0.85% of the value it adds to the economy. This is an important characteristics of the real estate sector, and one that it share with other construction related sector like building and construction (which consumes 0.12%) by comparison, the value for service sectors such as transport, finance and insurance, and utilities sectors were 3.4%, 14.7% and 16.9% respectively in 1996 (FOS, 1997).

It has already been stated that the real estate sector is relatively in Nigeria. This trend might be set to change, given the spate of activity in the sector since the advent of the present democratic dispensation in Nigeria. Real estate development draws resources (liquid capital, housing, plant an equipment, etc) from the economy. In terms of money profit returns, real estate development takes much from the economy and gives less back. It is only in terms of durable capital returns such as the housing stock that the real estate sector contributes significantly to the economy.

## 2.5.2 Types of Real Estate

**Current state:** The real estate sector in Nigeria is largely divided into Residential and non-residential segments. The residential segment largely account for the large chunk of real estate/housing demand in Nigeria.

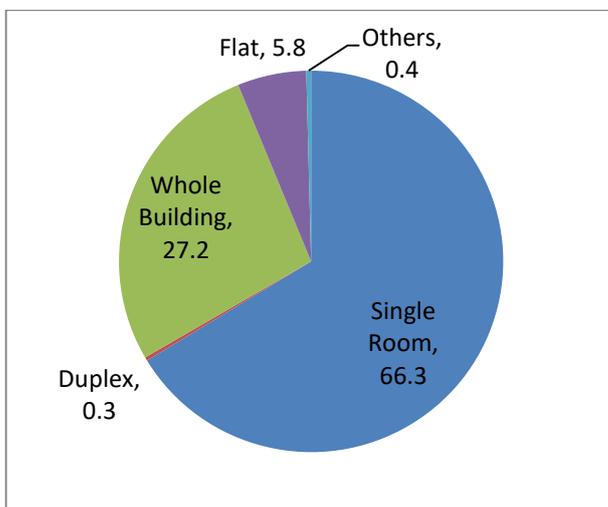
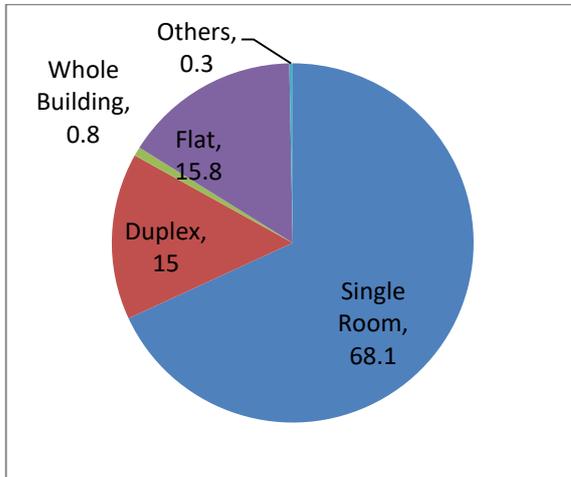
**Residential Segment:** Account to estimates from the Federal Housing Authority and other players in the housing sector, housing deficit has been widely reported to be about 16 million units. Since its inception in 1992, the FMBN has approved a total of N121.2 billion mortgage through primary mortgage institution (PMIs) and Estate Development Loans (EDLs): however only half of the approved loans (N61.6 billion) has been disbursed. Hence a total of 53,518 housing units have been build over the 19year period from Mortgage backed bonds and Estate Development Loans.

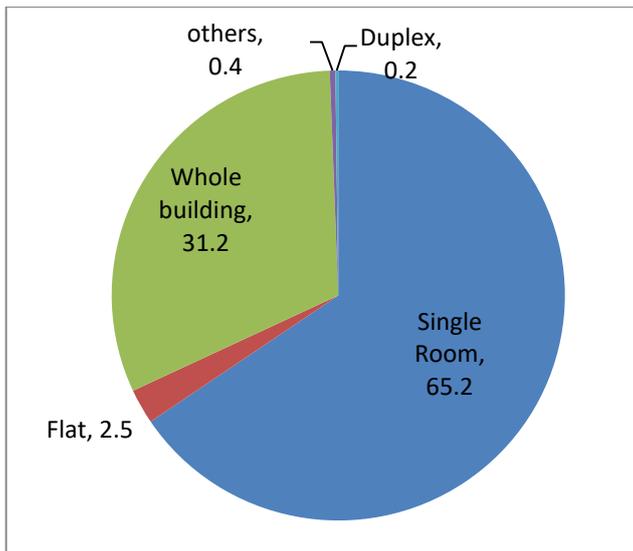
Therefore, it is evident that the Government's involvement in housing delivery through the Federal Mortgage Bank, is grossly inadequate to meet housing demand, which is growing at a such a fast pace, causing widening deficit. With a weak supply side, there's immense opportunity in the residential real estate segment. Beyond the fact that housing supply lags demand quite significantly, another key constraint in bridging the hug gaps in housing delivery lies on the demand side, as only a minute portion of Nigeria's 150million people can afford these houses. FMBN and privately owned residential estates are only affordable to individuals in the High and Upper Middle Income bracket (Upper Middle: \$3,945 - \$12,200: high income:> \$12,200 based on World Bank Classification).(2007 world bank)

In the same vein, mortgages are only accessible to individuals in this income bracket- which based on our estimates is less than 5% of the total population. Hence, the majority (about 95%) of the population which are in the low income bracket still reside in

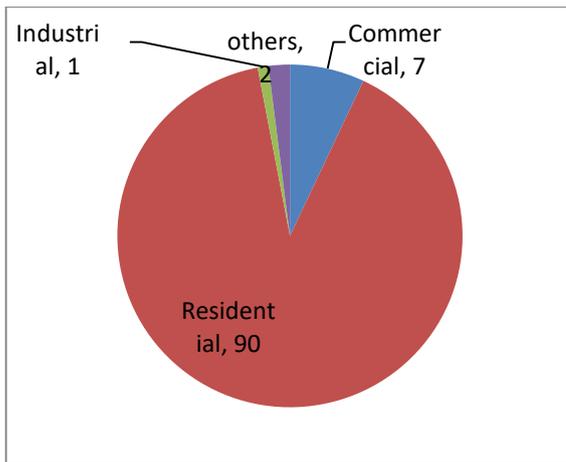
substandard houses mostly single rooms in urban slums or thatched houses in the rural areas.

Figure 1 below shows the distribution of Nigerian Population by the housing





**Commercial segment:** The demand for commercial real estate (Office, shops, warehouses, hotels) in Nigeria is highly concentrated in commercial cities like Lagos, (South West) and Port Harcourt (South South), Though this segment accounts for the less than 20% of real estate demand (our estimate), demand still outpace supply, especially as available properties are significantly premium priced. According to Knight Frank Research, Lagos has the fifth highest office rent (measured US\$/qft/yr) globally as at Q4'09. In Nigeria Julius Berger Plc., HFP Engineering and Costain W. A. are the major construction companies with focus in construction of commercial real estate. (Statistical Bulleting Vertical Research 2008)



**Outlook on Residential Real Estate:** there are immense opportunities in the residential housing sector. A major constraint to the development of this potential has however being the high interest rate on mortgage and low penetration of mortgage facilities. Recently however (March 2011), the Federal Mortgage Bank (FMBN) announced that plans to increase its capital base to N150 billion within the next 24 months are underway.

Based on Business Day Newspaper report (March 22, 2011), part of FMBN's two year plan would subsequently include the injection of N250 billion annually. In addition to the planned recapitalization which would make the FMBN adequately positioned to lend to estate developers, there was also a change in the fund disbursement policy to lenders. The change involves reducing the number of tranches in which monies are released to estate developers to 3 from the previous 4. Estate developers in the new policy dispensation would have access to higher liquidity and would be in a position to complete housing projects at a faster rate. (Statistical Bulletin, Vertical Research 2008)

## 2.6 Transportation Activities in Nigeria

The early major roads and rails in Nigeria exhibit a north-south orientation mainly to allow the transport of crop's and minerals from the hinterland towards the coast. A large proportion of the country was thus by passed. The nature and spatial pattern of transport

investment since independence, which, focused primarily on south-north routes, has not been conducive to an efficient national transport network. Furthermore, the implementation rate of planned projects has invariably fallen short of expectation. Inter governmental relationship in the ownership and maintenance of roads area always changing. During the oil boom, the Federal Government assumed responsibility for most state roads that it has now failed to rehabilitate and maintain. An integrated approach that emphasizes the strengthening of the transport sector through development and rehabilitation of roads, harbours, railways airports and pipeline and electric power transmission systems need to be adopted, (Fejokwu, 1988).

Transport has, since the early days of community development co-operation been a priority and the subject of considerable financial effort. In general, although rail transport makes some contribution to the overall needs for movement in a town or city, the facility most under pressure and most suitable for expansion is the road system. The few existing roads are narrow, winding, pothole-ridden and unpaved in many stretches. The result is longer travelling times and greater expense for the movement of freight on a given unit of road length in these regions, (Egunjobi, 1988).

In the south-east state, there are four major trunk roads, Enugu-Abakaliki, which leads to Abia and Cross River State: Enugu – Port Harcourt which passes through Abia, and Imo State to Port-Harcourt, Enugu Onitsha which leads out to Delta, Edo, Ondo and other Western States and Lagos, Enugu-Ninth Mile Corner – Makurdi that opens into far northern parts of Nigeria. The roads to Port Harcourt and Onitsha are two lane double – carriage way.

In most urban areas, increase of car ownership is positively correlated with income and the emergence of an urban middle class. This is one of the reasons for the severe central

city congestion observed in many cities in Nigeria. There is clearly a very strong current in favour of economic liberalization. State controls are being loosened in many countries and market opportunities are being created for new operators.

There has been an upsurge of Government investment in a new road network to replace the old, narrow, poorly drained and winding set of roads that were inherited from the British. In the 1962 – 1968. Development Plan, planned public investment on roads was N150.6 million for reconstructing the Trunk A system and Trunk B network by widening, strengthening and improve surfacing. The 1970 – 74 Second National Development Plan, total revised allocation to roads and bridges was N632.41 million. (Idachaba, 1976).

### **2.6.1 Contribution of the Transportation Sector to National Output**

Few would dispute the proposition that a good road infrastructure is essential basis for economic development. That is why road-building projects have always had a prominent place in development programmes. Unfortunately, less emphasis has traditionally been placed on maintenance as a prerequisite for sustaining economic development. In many developing countries, road networks are now under severe pressures as maintenance fails to keep pace with the deterioration caused by both human and natural influences.

Good communications are recognized as a basic prerequisite for improving economic performance. Reduced economic activity means even less revenue will be generated and thus, less contribution will be made by the transportation sector to the national GDP. Given this situation, the obvious argument is that the authorities concerned should, in the allocation of scarce resources, give priority treatment to transport.

### **2.6.2 The Transportation Sector and the Construction Industry**

Out of Nigeria's total road length of 200,000 kilometre, 32,100 kilometres representing 16% of the total roads network belong to the Federal, State Government own 30,500 kilometres about 15%, 130,000 kilometre (65%) belongs to local governments. The balance of 6,800km roads belongs to other groups and individuals. Only 9% of the 200,000 kilometres of road networks in Nigeria have been certified good and well paved. Many of Nigeria roads require reconstruction. Preparatory studies for the World Bank's vast sub-Saharan transport programme showed that only 50% of the continents 300,000km of asphalt road were in acceptable condition, 25% had reached the points where replacements were essential and 25% were completely run down. In addition, the situation on the dirt roads is worse, with only 22% acceptable, 32% poor and 32% bad. The now-moribund Petroleum Trust Fund (PTF)'s mandate included making federal roads motor able 66% of the PTF's take-off project fund was applied to National Highways and Urban Roads Rehabilitation Programme (NHURRP). This involved the rehabilitation of 12,500kilometres of Federal highways linking the North-South, East – West axes and 1000 kilometres of roads in selected urban centres nation-wide. In its first phase of roads rehabilitation, the PTF spend about 24.33 billion naira on about 12,500km of roads nation-wide, with each kilometers of road coasting between 2 million naira and 3 million naira. In the river areas, the PTF plans to rehabilitate the waterways. Road repairs are going hand-ion-hand with the improvement of navigability of Rivers Niger and Benue through dredging. (Buhari, 1996).

The extent of commitment of funds to the transportation sector in the recent past as well as the number of projects emanating from the sector whether completed, ongoing or planned, underscores the position of the transportation sector as a client to the construction industry. The transportation sector is important in several ways; as a consumer of the wealth of the national economy, as a significant contributor to the

workload of the construction industry as producer of wealth in the form of fixed capital for the national economy, and as a facilitator of wealth creation by the other sectors.

Nigeria's physical infrastructure gap, especially in transportation-road, rail, airports and sea ports – is the strongest investment case for our optimism of growth in the construction industry.

Only about 30% of Nigeria's 193,200km total road network is paved, relative to an average of 70% and 58% for frontier and emerging markets respectively. The gap is wider when compared with advanced economies with an average paved road network of c. 100%.

The deficiency in rail infrastructure is even worse, as Nigeria's existing 3,528km rail network is grossly insufficient to cater for the rising need for mass transit of people and goods, given its large population (about 150 million; annual growth rate c2.5%) estimated to be growing at an annual rate of c.2.5%. Apart from this, the design of the rail network (narrow gauge), quite obsolete thus limiting the capacity and type of trans that can be used on the rails. According to the Federal Ministry of Transport, the rail transport sector recorded the highest volume of freight (2.4 million tones) in 1977 even as passenger numbers reached its highest of 15.5 million in 1984. However, from the World Bank latest yearly data, volume of freight transported through rail in Nigeria is about 77 million tones per kilometre, while passengers conveyed stood at 174 million passengers per kilometer. These figure rank quite low in comparison to peer countries like South Africa and Egypt similar frontier market like Argentina, Ukraine, Romania and Kazakhstan; and extremely incomparable to bigger emerging markets like China, India and Brazil.

Whilst noting the improvement made in airport infrastructure over the last 10 years specially the construction of the Nnamdi Azikwa Abuja Airport and Lagos Murtala

Muhammad Airport Terminal 2, airport infrastructure in terms of numbers quality of infrastructure and even capacity (using airside and landside constraints) cannot ranks *pari passu* with comparable African Countries – Egypt and South Africa especially.

According to the International Civil Aviation Organization (ICAO), the air-side of an airport comprise runways, taxiways, gates and parking positions. The number of aircraft movements (departures/arrivals) per unit of time typically determines the air-side capacity of an airport, amongst other factors such aircraft mix and weather. The land-side of an airport comprise terminals and all the facilities used by passengers and cargo shippers, including security, immigration and custom facilities as well as access to roads and railways, parking space and storage facilities. Land-side capacity is measure in terms of number of passenger per year or the maximum number of passenger per day. For instance, South Africa has fewer international airport than Nigeria (3 as against 4), significantly outweigh Nigeria's four international airports. Due to their higher passenger handling capacities. South Africa's Johannesburg airport and Egypt's Cairo airport had annual passenger traffic of about 16 million and 14 million (based on 2009 figures) respectively compared or combined annual passenger traffic of about 10.2 million for Nigeria's four international airports.

Having highlighted the deficiencies in few physical infrastructure roads, rail, airports and ports, we note that more attention is being given to proffering solution to bridge the gap. From the recent re-launch of the power sector reforms, growing popularity of borrowing (among sub-nationals) as a means of finance infrastructural shortages, the rising Private Partnership, these seem to be a renewed commitment to addressing key infrastructural challenges. Against this backdrop, we believe the construction sector is positioned, on a long term basis, to benefit immensely from the anticipated rises in infrastructure spend.

World Bank Data Base, Vertical Research (2009)

## **2.7 The Utilities Sector as a Service Sector**

The utilities sector comprises the electricity and water subs sectors. Electric power sub sector in Nigeria includes the hydroelectric power stations (at Kainji, Jebba and Shiroro) gas fired thermal stations (at Egbin and Afam) and transmission lines, step down transformer stations, etc. The utilities sectors serves the purpose of stimulating industrial growth, earning foreign exchange, and providing essential public services. This sector is public sector dominated. This may not be unconnected with the huge amounts of money that these project consumed 21 billion naira was allocated to NEPA in the year 2000 alone. Expanding to ownership base of projects in the utilities sector in Nigeria has been one of the cardinal points of economic reforms since 1986, (De Garmo et al., 1979: Abubakar, 2000; Agunloye, 2000).

Water supply projects in Nigeria are mostly intended for drinking, industrial, and agricultural purpose. Nigeria like most other countries is faced with the realities of expanding water needs. It has been estimated that water supply for agricultural use required \$97 billion over a fifteen-year period commencing 1978. \$9 billion was required over the same period for the assessment of resource alone. More recently in Nigeria, over N84 billion was expended on water supply over a three-year period (1999 – 2001). (Biswas, 1978: Alade, 2001; Postel, 1992).

The provision of water to the populace is rarely considered in economic activity in most countries. Oftentimes, water supply is entered in the public finance portfolio as a social overhead item. Contemporary thinking on the subject appears to favour the consideration of water as an economic good. Water is a recyclable item, and such processes cost money. Government subsidies on the supply of water cannot be maintained in the long run, and such subsidies encourage wasteful use of water. Electric power statistics provide good

measures of the industrialization capability of an economy. Correlations would be expected between the volume of generation and consumption of electric power and the volume of industrial activity. The inefficiency endemic in the utilities sector in Nigeria adds about 60% to the cost of doing business in Nigeria. (Postel, 1992; World Bank, 1992, Winpenny 1994).

### **2.7.1 The utilities Sector and the National Economy**

One aspect of water supply provision by the public sector in Nigeria is the fact that the water supplied is invariably grossly under priced. Publicly owned and managed water works in Nigeria generally run at a loss. Funds are thus not available for (i) the expansion of the existing water supply system (ii) the modernization of the water works, bearing in mind that fact that most of them were built with technology that is now outdated. (iii) the maintenance of existing water projects, in order to realize optimum performance. Such funds must be sought from other sectors of the national economy, making the utilities sector a consuming rather than a contributing sector of the economy, (Audu, 1975; Faluyi, 1979; Ojo, 1980.)

Globally, the private sector is yet to become significantly involved in water supply activities. In a market estimated conservatively at between US\$600 billion and US \$1,000 billion over the period 1996 – 2006, the private sector fund only US \$15 billion only. The utilities sector thus depends solely on the public sector for funding. Some countries have completely privatized their water supply systems. Water supply provision by the private sector is attractive economically to governments, especially in the developing world. Yet, it is least feasible in these countries, owing to poor infrastructural basis, poor construction and maintenance, limited coverage, and loss through leakages and illegal connections. Most importantly however, pricing regimes are arbitrary, not reflecting the fact that water

is an economic good. Water rates are usually subject to political manipulations, and cannot be related to demand, supply capacity, or cost of production of the water being supplied in any empirical manner, (Martin, 1996a).

## **2.8 The Agricultural Sector and Nigeria's Development:**

A strong and an efficient agricultural sector would enable a country to feed its growing population, generate employment, earn foreign exchange and provide raw materials for industries. The agricultural sector has a multiplier effect on any nation's socio-economic and industrial fabric because of the multifunctional nature of agriculture.

Agricultural sector is the engine of growth in virtually all developed economies. Agricultural sector is engendering sustainable development and a significant level of poverty reduction in Brazil. Of course the scenario in Brazil is in contradistinction to that of Nigeria where it would seem that successive Nigerian governments have only been paying lip service to agricultural development. Thus, the essence of this comparison is to reiterate the fact that Nigeria and other Third World countries need to urgently develop their monumental agricultural potential if they are to achieve rapid industrial and economic development.

The study of economic history provides us with ample evidence that an agricultural renovation is a fundamental pre-condition for economic development. The agricultural sector has the potential to be the industrial and economic springboard from which a country's development can take off. Indeed, more than not, agricultural activities are usually concentrated in the less-developed rural areas where there is a critical need for rural transformation, redistribution, poverty alleviation and socio-economic development (Stewart, 2000:1).

The Brazilian experience is, of course a striking example of how agriculture can advance beyond its primary function of supply food and fibre. The agricultural sector has the potential to shape the landscape, provide environmental benefits such as land conservation, guarantee the sustainable management of renewable natural resources, preserve biodiversity and contribute to the viability of many rural areas. In fact, through its different spheres of activities at both the macro and micro levels, the agricultural sector is strategically positioned to have a high multiplier effect on any nation's quests for socio-economic and industrial development. It is indubitable that a sustained agricultural growth has been highly instrumental to Brazil's rapid rural transformation, the empowerment of Brazilian peasants and the alleviation of abject poverty.

Interestingly, the Nigerian economy, like that Brazil, during the first decade after independence could reasonably be described as an agricultural economy because agriculture served as the engine of growth of the overall economy (Ogen, 2003:231-234). From the standpoint of occupational distribution and contribution to the GDP, agriculture was the leading sector. During this period Nigerian was the world's second largest producer of cocoa, largest exporter of palm kernel and largest producer and exporter of palm oil. Nigeria was also a leading exporter of other major commodities such as cotton, groundnut, rubber and hides and skins (Alkali, 1997:15 – 16). The agricultural sector contributed over 60% of the GDP in the 1960s and despite the reliance of Nigerian peasant farmers on traditional tools and indigenous farming methods, these farmers produce 70% of Nigeria's exports and 95% of its food needs (Lawal, 1997).

However, the agricultural sector suffered neglect during the hey-days of the oil boom in the 1970s. Ever since then Nigeria has been witnessing extreme poverty and the insufficiency of basic food items. Historically, the roots of the crisis in the Nigeria economy lie in the neglect of agriculture and the increased dependence on a mono-cultural

economy based on oil. The agricultural sector now accounts for less than 5% of Nigeria GDP (Olagbaju and Falola, 1996: 263).

It is against the backdrop that this paper sets out to draw comparative lessons from the Brazilian experience for possible replication in Nigeria. Such an approach is particularly feasible given the fact that Nigeria shares so much in common with Brazil in terms of a highly conducive agricultural climate, huge and diverse population as well as the availability of immense natural resources.

For the purpose of analysis, the paper is divided into five major sub-divisions, the first part introduces the discussion by stating the rationale, objectives and significance of the study. Part two examines the historical origins of the Brazilian agricultural sector while the third part focuses on the contribution of the agricultural sector to the Brazilian economy in terms of its income and employment generating capacities among other micro-economic indices. This part also analyses the socio-economic impact of agricultural growth on poverty eradication and sustainable social development in Brazil. The fourth part concentrates on the present state of Nigeria policy makers from the Brazilian agricultural policy environment. The last part concludes the essay. Consumption of Brazilian motorists (Ogen, 2002: 31 -43). This further reduce Brazil's reliance imported fuel, and it saved her much needed foreign exchange and consolidated the sugar industry's role in the energy sector. For a nation plagued with endemic fuel scarcity and chaotic fuel queues in spite of its oil producing status, this is another area where Nigeria stands to benefit from the Brazilian experience.

### **2.8.1 Current State of Nigerian Agriculture and Policy Recommendations**

As noted earlier, the neglect of the agricultural sector and the dependence of Nigeria on a mono-cultural, crude oil-based economy have not augured well for the well-being of

the Nigeria economy. In a bid to address this drift the Nigerian government as from 1975 became directly involved in the commercial production of food crops. Several large scale agricultural projects specializing in the production of grains, livestock, diaries and animal feeds, to mention but a few were established (Fasipe 1990, 129 – 130). Sugar factories were also established a Numan, Lafiagi and Sunti (Lawal, 1997, 196) the Nigeria Agricultural and Co-operative Bank (NACB) was established in 1973 as part of government's effort to inject oil wealth into the agricultural sector through the provision of credit facilities to support agriculture and agro-allied business (Olagunju, 2000:98).

In spite of these efforts, it is heartrending to note that as from the mid 70s, Nigeria became a net importer of various agricultural products. In 1982 alone, Nigeria imported 153,000mt tons to palm oil at the cost of 92million USDs and 55,000mt tons of cotton valued at 92 million USD (Alkali, 1997:10). Between 1973 and 1980, a total f7.07 million tons of wheat, 1.62 million tons of rice and 431,000 tons of maize were imported. Thus from N47.8 million in the 60s, the cost of food imports in Nigeria rose to N88.2 million in 1970 and N1,027.0 million in 1988 (Alkali, 1997: 19-21). Since the 1990s and until the recent ban on rice importation. Nigeria has been spending an average of 60 million USD on the importation of rice annual. Indeed, in 1994, the agricultural sector performed below the projected 7.2 percent of budgetary output (Lawal, 1997:197 – 198).

Between 1995 the government further embarked on the reformation of the lending policies of the Agricultural Credit Guarantee Scheme (ACGS) for easier access to agricultural credits schemes. It also established the Calabar Export Processing (EPZ) and initiated the Enugu, Kaduna, Jos and Lagos EPZs with each specializing in specific food and export crops. Infact, the National Rolling Plan for 1996 – 1998 assumed that by year 2000, Nigeria would have been able to feed its population, develop the capacity to process agricultural raw materials both for local industries and for export and significantly

increase the contributions of the agricultural sector to the GDP (Lawal: 1997:198). These lofty objectives have turned out to be a mirage mainly because of official corruption and lack of commitment on the part of those saddled with the responsibility of implementing the government's agricultural policies. In order to get out of this doldrum, Nigeria policy makes need to be wary of development economists who assign a relatively minor role to agriculture in economic development and fervently believe that industrialization is synonymous with economic development (Ogen, 2002:27 and Ogundipe, 1998:135-138).

The Brazilian experience is a pointer to the important role of the agricultural sector in ensuring sustainable social development, indeed, there are some comparative lessons that could be drawn by Nigeria from structure of Brazilian agriculture. For instance, the Nigeria government needs to actively promote the established of the kind of agro-based industries that are capable of processing Nigeria's agricultural raw-materials in a most efficient manner thus, the emphasis should be on the local processing of raw crops for local industries as well as for export. This will create more employment opportunities and additional income will be generated.

The provision of agricultural subsidies for fertilizer, farm implements and equipment would also boost agricultural production. In addition, there is the need to put in place an agricultural tariff regime that would protect Nigeria's agricultural products from unbridled foreign imports and competition.

There is also the need for the provision of replanting grants to cash farmers so that they can replace their old trees with newer varieties. It has been observed that in spite of the fact that these newer varieties are high-yielding and relatively easy to maintain with a

shorter maturation period, most farmers are reluctant to do away with their old plantations because of the high cost of replanting new ones (Ogen, 2004:135).

It is equally important to provide special welfare scheme for farmers that will form part of a social policy to alleviate rural poverty and the redistribution of income in favour of the rural poor. Government should also strive to promote greater efficiency in the rural areas by extending equal social benefits; establishing rational schemes for agrarian reforms and improving the quality of life in areas that are quite remote from the main centres so as to alter the movement of people from rural communities to urban areas.

Furthermore, the resuscitation and development of the critically ailing Nigeria sugar industry and its by-product especially ethyl alcohol (ethanol) which comes from molasses (a by-product of sugarcane) is of an urgent and critical necessity. Given the intractable and embarrassing problem of fuel queues in Nigeria, ethanol could be used to produce a brand of automobile fuel known as alcogas or green petrol. Apart from being a renewable source of energy, and unlike fossil fuels, alcogas has little or no adverse effect on the environment. In fact, with gas Nigeria will be able to reduce her dependence on imported fuel and save additional foreign exchange for capital products (Ogen, 2004:133-135).

The above policies as well as the other steps taken by Brazil-when have been analysed in this paper-to achieve its enviable status must be carefully studied by Nigerian agricultural policy makers for possible implementation.

This paper underscores the historical primacy of the agricultural sector in the economy of Brazil. The study further reiterates the fundamental role of agriculture in any nation's quest for economic development and argues that an efficient agricultural system paved the way for the remarkable economic advancement of Brazil. The paper is of the view that

the bitter and frustrating experiences of Nigeria. Since the early 1860s in its fervent attempts to develop, underline the need to redirect attention to the agricultural sector to ensure sustainable development and food security. The role of agricultural deserves prominence since agricultural development provides the foundation for economic development. A strong and efficient agricultural sector would enable a country to feed its growing population, generate employment and foreign exchange, and provide raw materials for industries and a market for industrial products. It has been shown in this piece that Brazil towed this line and was able to change its hitherto under-developed status to that of Newly Industrialized Council (NIC).

It is hoped that with time, a country like Nigeria which is also blessed with immense natural and human resources will take a cue from the Brazilian experience and exploit the immense benefits accruable from a well-developed agricultural sector, the need for an urgent diversification of the Nigeria economy, coupled with the quest for rural development and poverty eradication make this move a critical necessary.

## **2.8.2 Budgetary planning and control**

### **2.8.2.1 Budgetary control**

(Alade, 2001) defines budgetary control as a financial management of projects through effective and judicious distribution of cost within various elements should be scientifically carried out. Management and monitoring of such costs centred should be enhance by effective cost checking and monitoring as the design and construction progresses.

To attain all the benefit defined above, the quantity surveyor and other members of the design team must entrench into the project procurement processes, budgetary control mechanism such as establishment of cost limit, cost models cost monitoring.

As previously stated, budgets are generally used for planning and controlling and expenditure of an organization or establishment. It is through budgets and budgeting that a company's plans projections can be converted into quantitative and monetary term for assessment, implementation and control. The building industry is not an exception. In the building industry, the same budgetary planning techniques are employed to ensure that the client (building owner/occupier) receives optimum level of satisfaction from the use of the project within a resource time cost.

The process of budget and budgeting control ensures that the over-lap between needs (space) and resource (fund) do not go negative. If the resource (fund) are fixed (cost limit) option available is to manage.

The resource within the various functional elements of the building project. The management of this fund is to ensure that, the available fund is evenly and judiciously distributed among the element such that one element does not receive undue benefit to the detriment of another. It would ensure that equal attention is given to functional elements in the building to make sure that they are able to fulfill their functions (structurally and Aesthetically).

Cost control may not be prerogative of the quantity surveyor but he is the only member of the design team that has the expertise and skill to plan, control, implement and monitor the budget upon which the client will receive confidence to proceed with the project. (Alade, 2001).

### **2.8.2.3 Budgetary Planning**

It is the process for determining the precise course of action in achieving a successful completion of a project at the price awarded contract sum and completion period through effective cost control and judicious and efficient supervision of the contract.

The first establishing budgetary planning is to identify project circle which may include some or all of the following:

Project circle

- Project identification arising from the client brief
- Feasibility studies covering specification, cost estimates, benefit/risks etc.,
- Project preparation including design and documentation
- Project appraisal
- Project implementation
- Project monitories and evaluation
- Facilities management

The use of construction as an economic regulator continues to be seen as a threat to the achievement and maintenance of high and consistent standards of training, skill and workshop. Failure in this direction militates against the introduction of new best practice and the avoidance of waste. The European Commission, in its study of the European construction industry has recognized this and the government is warned not to lose sight of this powerful influence, (RICS, 1998).

### **2.8.2.4 Government Budgets**

Alade, (2001) states that all over Nigeria, there are reported cases of unnecessarily prolonged public works projects undertaken by the general, the state and local

government authorities. Project which are budgeted for, at commissioning, are often not marched with realistic cost receipts and budget. This featured prominently from about 1980 when the oil boom in Nigeria started to show a remarkable fall. The main sources of government revenue is the crude oil and has soon as the world crude oil market base appeared to be unpredictable, the public finance pattern of Nigeria also appeared to be unsteady.

It could be vitally necessary to know the total of government capital expenditure in any particular year but that is a different matter from saying that it must be accounted for completely separately from current expenditure. Then next consideration is the time horizons: the length of any one budgetary period (twelve months, or more or less), the number of such period considered in any one budget, and the methods of linking on set of estimates with another. Different projects need very different lengths of time for their execution, not suitable for another. On the whole, it seems best to stick to the traditional twelve months cycle, in order to examine long term commitment carefully at the procedures as more of a formality in subsequent years.

## **2.9 Summary of Chapter two**

Building and construction sector is an important sector of the economy, it plays essential roles in the socio-economic development of a country. The activities of the industry have a great significance to the achievements of national socio-economic development goals of providing infrastructure, sanctuary and employment. Construction projects occurs in every sector of economic and social activity. Construction projects are frequently employed by governments to provide a sense of belonging for the citizenry, full employment, revenue, improved balance of payments, control inflation and raise standard

of living. Modern day construction is an economic activity in the developing world construction accounts for about 40 – 70% of the Gross Fixed Capital formation (GFCF) while housing, a subsection of construction, accounts for about 2 – 8% of the Gross National Product (GNP). The construction industry in Nigerian employs about 25% of the total registered labor force and is frequently used as a regular sector of economic activity by government.

Real estate is the technical term used by the federal office of statistic and central bank of Nigeria statistical bulletin to classify those activities that have to do with buildings, their letting, leasing and sales for purpose of personal, institutional, commercial or industrial uses. The real value of real estate lies in the value of housing as a producer good. It makes the creation of other goods and services possible. The facility most under pressure and most suitable for expansion is the road system. There has been an upsurge of government investment in a new road network but less emphasis has been placed on maintenance only 9% of the 200,000 kilometres of road networks in Nigeria have been certified good and well paved. Only 50% of the continents 300,000km of asphalt road were in acceptable condition 66% of the PTF take-off project fund was applied to the rehabilitation of 12,000 kilometres of federal highway, and 1000 kilometres of roads in urban centres nationwide.

The utility sector serves the purpose of stimulations industrial growth, earning foreign exchange, and providing essential public services in Nigeria, over N84 billion was expanded on water supply over a three –year period (1999 – 2001). In a marked estimated conservatively at between US\$600 billion and US\$1,000 billion over the period 1996 – 2006. The private sector funds only US\$ 15 billion only. The largely subsistence agricultural sector has not kept up with rapid population growth and Nigeria, once a large net exporter of food, now imports some of its food products.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

The main aim of the study is to examine the level of impact of building and construction sectors on gross domestic products and the real sectors on the Nigerian economy (1990 – 2009)

#### **3.2 Research Design**

Research design in this context address the planning of scientific inquiry or designing a strategy for finding out something. To achieve this objective of the study, secondary data were used on Gross domestic product prices in Millions of Naira for over the period of 20 years back (1990 – 2009). In determining the relationship between construction and real sectors, the investment trends and real sectors, gross domestic product and real sectors and the trend in gross domestic product over the years.

#### **3.3 Secondary Data**

##### **3.3.1 Data collection procedure**

The data for the study were obtained from the Central Bank of Nigerian statistical bulleting 2009. These data were used to achieve the objectives of the study. The US dollar was chosen as the basis for foreign currency because the US dollar is the most acceptable and widely used international currency.

#### **3.4 Method of Data Analysis**

There are many statistical methods in which the main objectives is to determine if a relationship exist between two or more variables. If such a relationship can be expressed by a mathematical formula, it can then be used for the purpose of making predictions.

This study uses statistical package called SPSS to carryout trend analysis and regression analysis. The data was obtained from Central Bank of Nigerian Statistical bulletin 2009. The descriptive statistic is employed to derive the line graph.

### 3.5 The co-efficient of determination ( $R^2$ )

Banister and Raymond (1984) The co-efficient of determination (R-square) measures the percentage of variation in the dependent variable that is explained by the regression on trend line. Hence, it is a measure of the degree of association or correlation between the two variables y and x.

### 3.6 Statistical method

A statistical method is required to test the hypothesis that the percentage change of the Gross Domestic Product from 1990 -2009 has no significant relationship with the real sector. And construction has no relationship with other sector.

#### 3.6.1 Terms Used in The Data Analyses

- i. MEAN ( $\bar{x}$ )..... The mean is one of the measures of central tendency. It is represented by ( $\bar{x}$ ) and measures the average of a given number of items or observations.

$$X = (X_1 + X_2 + X_3 \dots \dots \dots X_n)/n.$$

$$= (\sum x_i \Sigma) / n \text{ where 'n' is the number of observation}$$

The C=1 expression is the frequency of X, divided by 'n'

- ii. The mean deviation this is abbreviated as (M.D) or average deviation (A.D) and it is expressed (numbers) as

- iii. variance – this is denoted by 's' '2' which is equal

$$\text{To } (x_1 - x)^2 \dots x_n - /_{n-1}$$

$$\sum (X_n - X)^2$$

$$I = 1/n-1$$

Where 'n' is the numbers squared deviation observed.

- iv. The standard deviation (S)

This is a set of number e.g  $X_1, X_2, X_3, X_4, \dots \dots \dots X_n$

It is the square root of variance

$$S = \sqrt{\sum(X_1Q - X)2} = \sqrt{\sum(X_3QX)3} = \sqrt{\sum X2}$$

Where X represent the deviations of each of the number of X from  $\bar{X}$

- v. Regression analysis:- the simplest form of regression known as “bivariate linear regression involves the plotting on a graph of values of the independent variable (denoted by X) and the dependent variable (denoted by Y) > A pattern of dots is obtained. The object of regression is thus to fit a straight line through the dot that best describes the relationship between the variable.

The method commonly employed is that the “least squares” where the squares of the deviations of individual points from the chosen is kept to the barest possible minimum.

The equation for the straight line is usually written as:  $Y = a + bx$ , where a is the intercept of the chose line (i.e where the line cuts the Y-axis when the independent variable =0, and it” formula is;  $a = Y - bx$ , B is the slope of the line and is given by the formula.

$$b = \frac{\sum xy - \frac{(\sum x)(\sum y)}{n}}{\sum x^2 - \frac{(\sum x)^2}{n}}$$

Correlation – Correlation according to Chase (1985) is used to illustrate the position of a variable in the dependent variable (Y) that is associated with the independent variable (X) correlation is denoted by the litter “r” known as the correlation coefficient and given by the formula.

$$r_{xy} = \frac{\sum(x-\bar{x})(y-\bar{y})}{\sqrt{\sum(x-\bar{x})^2[\sum(y-\bar{y})^2]}}$$

If “r” is positive, then as x devietes from its means, so does Y too, and in the same direction, when “r” is negative, then as X deviates, then the more closely “X” deviations predict ‘Y” deviation.

To find out how much variance in Y is associated with the variance in x the square r is obtained. For example, if  $r=0.90$ , the  $r^2 = 0.72$  meaning that 72% of variance in y is

associated with variances in x other factors including errors make up the balance of 28%.

R-square is known as the co-efficient of determination, and is given by the formular.

$$R^2 = a \frac{\sum y - b \sum xy}{\sum y^2 - nx^2} = ny^2$$

Note that however the relationship between variables that correlation displays is association not causative.

### **Analysis of Variance (ANOVA)**

Norman *et al.*, (1975) and Hamburg (1979) also stated that ANOVA is essentially a test of significant to ascertain if two sample differ significantly. It allows conclusion to be reached on whether two sample comes from two populations possessing the same spread.

The procedure for calculating

ANOVA is outline as follows.

### **Degree of freedom**

The first step is to get the degree of freedom of each variable for a bivariate linear equation the degree of freedom respectively is given by:

$$df 1 = k - 1 \text{ where } k = \text{number of variable}$$

$$df 2 = N - k \text{ where } N = \text{number of sample}$$

### **Sum of square for treatment (S.S.T)**

This process measures variation between the sample means. The distance between each treatment mean and the general sample means is squared and multiplied by the number of sample measurement for treatment. The result for all treatment is added together.

The formular is given as:

$$SST = \sum n_i (Y_i - Y)^2$$

Where  $n_i$  = sample size treatment where  $Y$  = overall mean response of all sample measurements.

### **Means Square Treatment (MST)**

To get an average of the sum of square for treatment above for computational purposes. The SST is divided by the degree of freedom applicable to it. This can be written as

$$MST = \frac{SST}{K-1}$$

### **Sum of Squares for Error (SSE)**

This is a process of measuring the sample variance with the treatment mean attributable to sample errors. The value of SSE is given by the formula.

$$SSE = \sum_{i=1}^n (Y_{1i} - Y_1)^2 + \sum_{i=1}^n (Y_{2i} - Y_2)^2 \dots \dots \dots \sum_{i=1}^n (Y_{ni} - Y_{-p})^2$$

Where  $Y_{ii}$  = the  $i$ th measurement of sample are  $Y_{2i}$  = the  $i$ th measurement of that sample

### **Decision Rules**

A decision is set of condition under which the null hypothesis is accepted or rejected. A decision is usually stated in the form of

HO :  $f_{0.05} < f - \text{calculated}$  : Reject

HO:  $f_{0.05} > f - \text{calculated}$  : Accepted

This assumes a 50% level of significance is set.

## **CHAPTER FOUR**

### **4.0 DATA ANALYSIS AND DISCUSSION**

#### **4.1 Introduction**

The data collected were analysed using regression analysis to examine the Relationship between the variables collected, that is the relationship that exist between Buildings and Construction and the real sectors (5), the relationship between building and construction and gross domestic product and the relationship between gross domestics product and real sectors.

#### **4.2 The research data**

The data used for this study comprises of financial and budgetary data collected from Central Bank of Nigeria statistical bulletin from 1990-2009. All the data are in Naira units, six Variables were considered. Aspects of the parameters that were of interest included the the Gross Domestic Products in millions of Naira of each sector expressed in Dollar value.

Table 1 shows the existing Data of gross domestic product prices in Millions of Naira from 1990 – 2009.

Table 2 shows the Data expressed in dollar value.

Table 3 shows the Naira/Dollar value.

Table 4: shows the percentage contribution of all the sectors GDP to the total GDP from 1990 – 2009.

**Table 4.1: Gross Domestic Product Prices at Current Basic Prices In Millions Of Naira 1990  
– 2009**

Years	Building & construction	Industry	Agric	Real Estate	Utilities	Transport	Total GDP
1990	4350.80	115591.40	34344.60	3907.20	1178.00	5438.50	267550.00
1991	4900.30	136627.70	97464.10	4793.90	1297.40	6150.30	312139.70
1992	6109.70	274755.30	145225.30	5975.60	1405.20	9011.30	532613.80
1993	8019.10	282305.90	231832.70	9342.20	1600.80	15008.50	683869.80
1994	10324.60	283563.10	349244.90	27486.70	1795.20	32023.60	899863.20
1995	13784.40	873884.70	619806.80	46307.80	1915.30	50314.90	1933211.60
1996	16042.20	1293225.60	841457.10	60707.90	2006.30	655314.00	2702719.10
1997	18775.70	1215912.20	953549.40	67497.00	2037.60	75678.10	2801972.60
1998	24877.80	882034.00	1057584.00	9844.70	2020.70	97652.20	2708430.90
1999	27527.50	1179551.20	1127693.10	133184.70	2109.80	116501.70	3194015.00
2000	30603.90	2359313.30	1192910.00	165069.70	2200.30	129092.00	4582127.30
2001	40744.10	1874082.90	1594895.50	185813.50	16400.00	144635.20	4725086.00
2002	47985.40	2042716.40	3357062.90	218966.90	18824.70	178783.70	6912381.60
2003	58905.40	3037706.30	3624579.50	290437.70	22397.40	224881.20	8487031.60
2004	166078.10	4610083.70	3903758.70	444688.30	26829.40	365730.60	11411066.90
2005	215786.10	6094891.30	4773198.40	680790.80	29387.40	385481.60	14572239.10
2006	250332.20	7488743.50	5940237.00	765184.70	42614.80	441822.30	18564594.70
2007	266464.00	3085380.00	6757867.70	871568.00	45778.40	473445.40	50657317.70
2008	306581.60	9719513.80	7981397.30	1002303.20	52670.60	479126.70	2429329.30
2009	347690.70	7972489.50	8193351.70	1142366.50	62150.30	506720.80	24712669.90

**Sources:** Central Bank Of Nigeria Statistical Bulleting (CBN, Abuja Nig) (Dec. 2009).

**Table 4.2: Gross Domestic Product Prices in millions in Naira express in Dollar Value**

Years	Building & construction	Industry	Agric	Health	Real Estate	Utilities	Transport	Total GDP
1990	553,3	14,702	4,368	18,7	497	150	692	34,030
1991	533	14,851	10,594	19	521	141	668	33,928
1992	639	28,732	15,287	48	629	148	946	56,064
1993	400	14,115	11,592	33	467	73	750	34,193
1994	474	13,007	16,020	35	1,261	82	1,469	41,278
1995	632	40,086	28,432	40	2,124	88	2,308	88,679
1996	736	59,322	38,599	42	2,785	92	30,060	123,978
1997	861	55,776	43,741	45	3,096	93	3,471	128,530
1998	1,141	40,460	48,513	74	4,516	93	4,479	124,240
1999	320	13,716	13,716	22	6,109	25	135	37,140
2000	310	23,904	12,086	37	1,672	22	1,308	46,425
2001	369	16,960	16,159	42	1,682	148	1,309	42,761
2002	421	17,934	29,474	43	1,922	165	1,569	60,688
2003	464	23,919	28,540	42	2,287	176	1,771	66,827
2004	1,221	33,898	28,704	44	3,270	197	2,689	83,905
2005	1,622	45,926	35,889	51	5,119	221	2,903	109,731
2006	1,926	57,606	45,694	60	5,886	328	3,399	142,804
2007	2,082	24,105	52,796	68	6,809	358	3,399	161,385
2008	2,598	82,369	67,696	84	8,494	447	4,064	206,076
2009	2,354	53,868	62,243	75	7,734	421	3,431	167,317

**Source:** Authors Field Survey (2011)

**Table 4.3: Average of Social Exchange Rate of The Naira (N/Us \$1.00)**

Years	Average social exchange rate
1990	7.8
1991	9.21
1992	9.56
1993	20.1
1994	21.8
1995	21.8
1996	21.8
1997	21.8
1998	21.8
1999	86.0
2000	98.7
2001	110.5
2002	113.9
2003	127.0
2004	136.08
2005	132.8
2006	130.2
2007	128.2
2008	117.9
2009	145.7

**Source:** Central Bank of Nigeria Statistical Bulletin December, 2009

**Table 4.4: Percentage Contribution of the Sector GDP to the Total GDP of all the Sectors  
From 1990 – 2009**

Years	Building & construction	Industry	Agric	Health	Real Estate	Utilities	Transport
1990	2%	43%	12%	0.05%	14%	0.44%	2%
1991	15%	43%	31%	0%	1.50%	0.41%	1.97%
1992	1.10%	51%	27%	0.08%	1.10%	0.20%	1.69%
1993	1.17%	42%	33%	0.09%	1.30%	0.20%	2.10%
1994	1.14%	31%	38%	0.08%	2.40%	0.19%	3.50%
1995	0.71%	31%	32%	0.04%	2.30%	0.09%	2.60%
1996	59.00%	47%	31%	0.03%	2.20%	0.07%	24%
1997	0.67%	43%	34%	0.03%	2.40%	0.07%	2.70%
1998	0.91%	32%	39%	0.05%	3.60%	0.01%	3.60%
1999	0.86%	36%	53%	0.05%	4.15%	0.04%	3.80%
2000	0.95%	51%	26%	0.07%	3.60%	0.04%	3.60%
2001	0.8%	39%	33%	0.09%	3.90%	0.34%	3%
2002	1%	29%	48%	0.06%	3.10%	0.27%	2.50%
2003	0.80%	35%	42%	0.065	3.40%	0.26%	2.60%
2004	19%	40%	34%	0.05%	3.80%	0.20%	2.20%
2005	1.40%	41%	32%	0.04%	4.60%	0.20%	2.60%
2006	1.30%	40%	31%	0.04%	4.20%	0.25%	2.30%
2007	1.20%	40%	32%	0.04%	4.20%	0%	2.20%
2008	1.20%	40%	32%	0.40%	4.10%	0.21%	1.90%
2009	1.40%	32%	37%	0.04%	4.60%	0.25%	2%
<b>Avarege percentage contribution over the years from 1990-2009</b>	<b>1.10%</b>	<b>41%</b>	<b>33%</b>	<b>0.05%</b>	<b>3%</b>	<b>0.10%</b>	<b>3.60%</b>

Source: Author Field Survey (2011)

**Table 4.5: Descriptive Statistics**

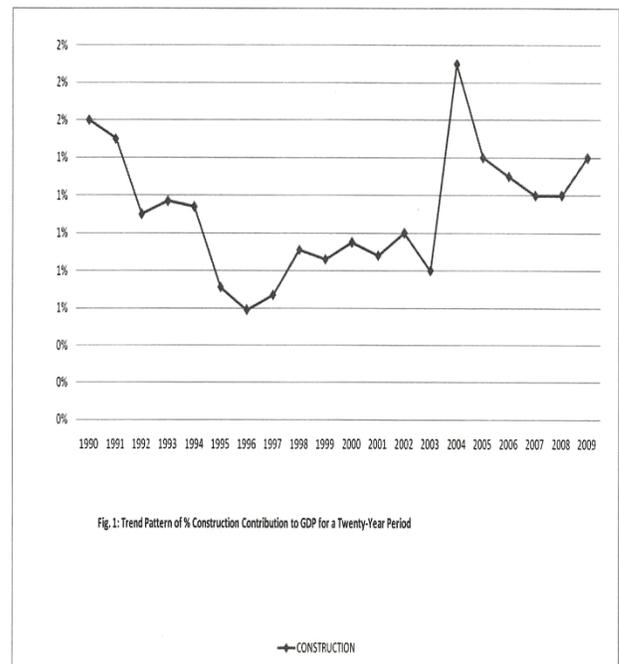
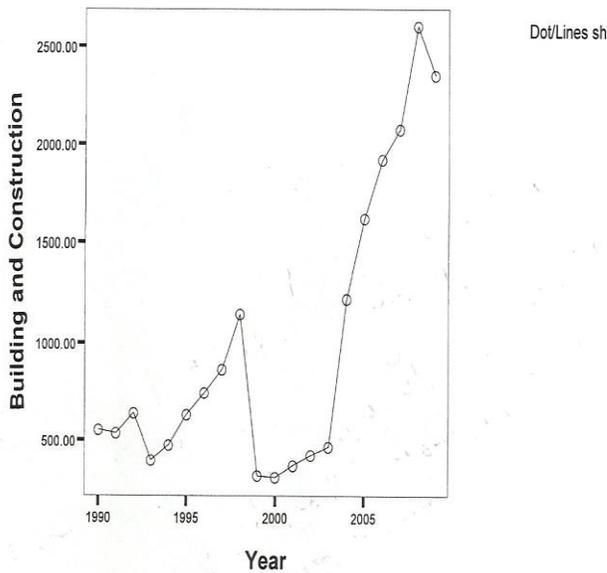
	N	Minimum	Maximum	Mean		Std.
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic
Building Construction	20	29.60	2365.24	634.6545	177.74171	794.88507
Industry	20	786.34	66119.14	18647.065	4422.2744	19777.012
Agriculture	20	233.64	62539.81	18291.654	4352.6632	19465.702
Health	20	1.00	75.41	26.2910	5.39953	24.14742
Real Estate	20	26.58	7771.20	2117.3010	563.92787	2521.9621
Education	20	3.83	320.38	102.4480	21.62091	96.9621
Utilities	20	8.01	422.79	114.4960	30.47730	136.29862
Communication	20	1.69	1741.52	344.0645	142.11256	63.54668
Transport	20	37.00	4457.92	1494.1545	313.20574	1400.6987
Total	20	1820.0680	168113.40	52706.541	12657.957	5660106
Valid N (listwise)	20					

It was apparent that the industry, agric and real estate sectors were the variable with the largest value over the period, construction, utilities and transportation had the lowest values. In order to display the trends more clearly, graphical representation was displayed below.

### 4.3 Graphical Representation of Data

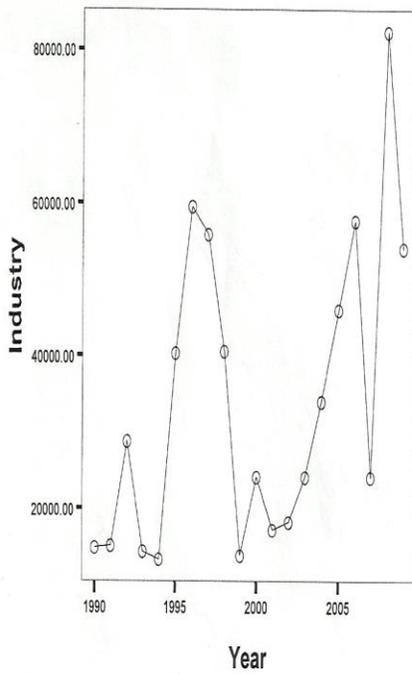
#### 4.3.1 The building and construction sectors

The GDP over the years for building and construction was not stable over the study period, from 1990 to 1994 the GDP was low during the military regime that is Babangida .administration, it went up in 1999 that is when the civilian took over, in 2000-2003 it drops drastically, and went up from 2004-2009.

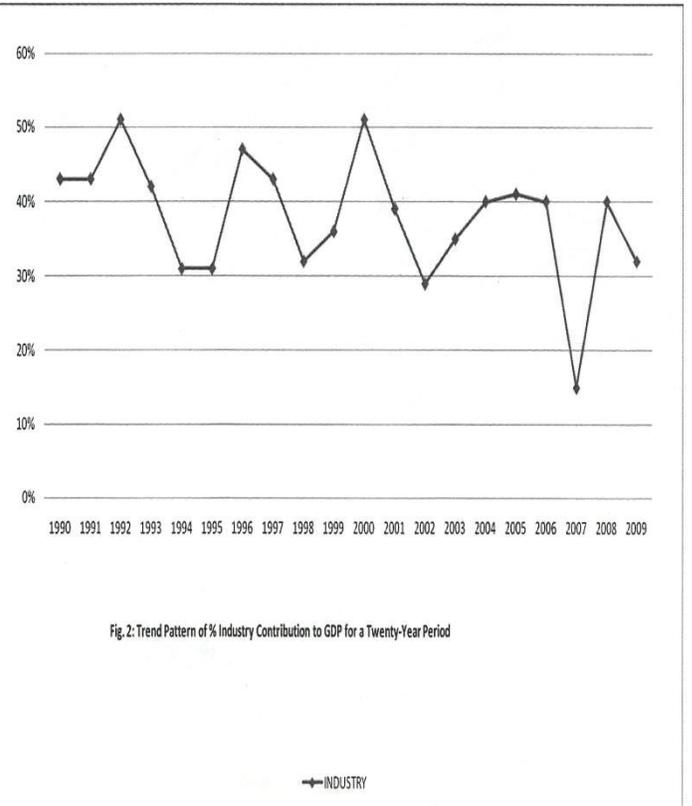


### 4.3.2 The industry sector

The trend over time for this sector was not stable, flowing up and down movement. It started very low from 1990-1992 during the military Regime went up in 1993 and down in 1993, went up in 1995-2000. Then moving up and down up till 2009.

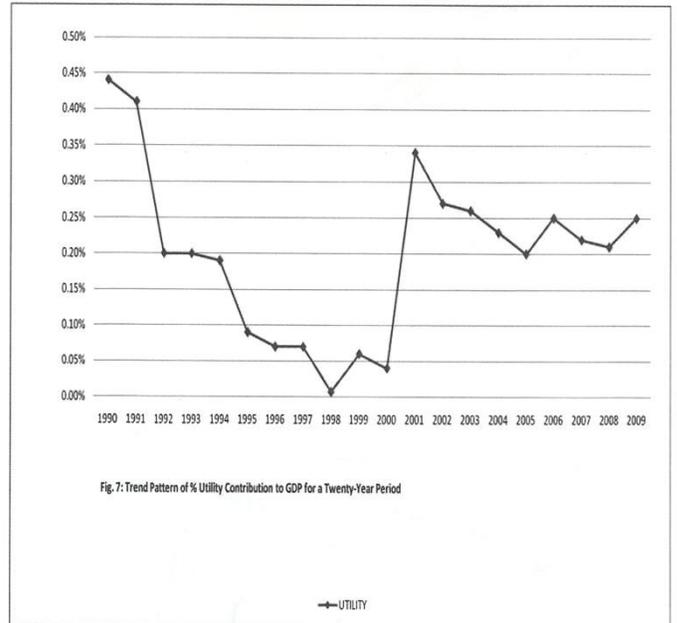
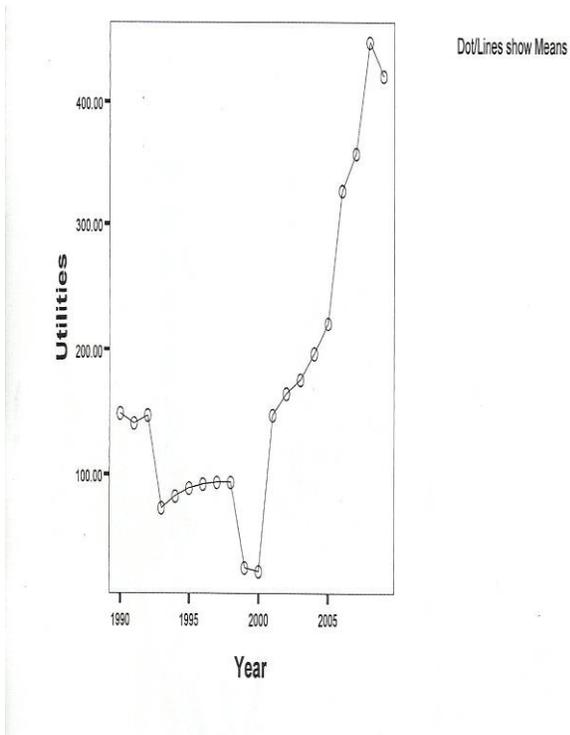


Dot/Lines sh



**4.3.3 Utilities sector and trend pattern of % utility contribution to GDP over the study period (20 yr).**

The graph revealed that the utilities sector experienced a gradual growth up 1993, dropped from 1995-2000. The upward movement drastically to 2009.

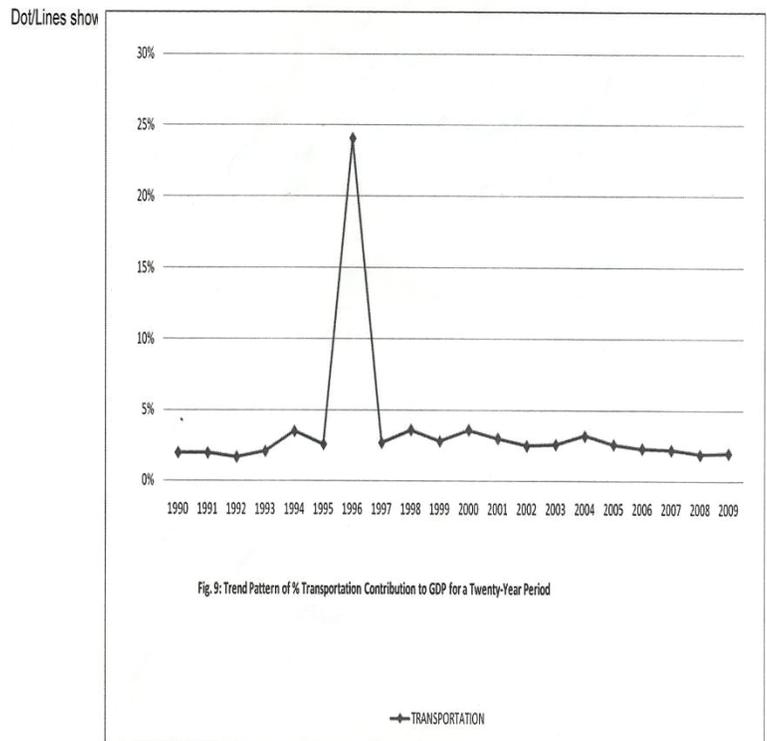
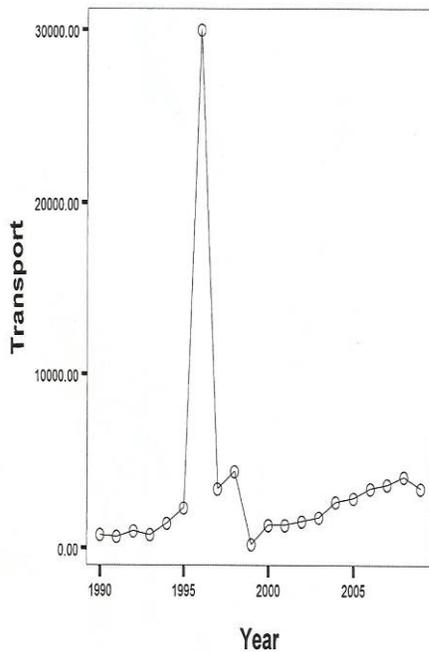


### 4.3.4 Transport sector and the trend Patten of % contribution to GDP

The transport sector shows a very low movement from 1990-1994 during the military regime, then picked up drastically in 1995-1997 but dropped low again from 2000-2009.

#### Interactive Graph

[DataSet3] C:\Program Files\SPSS Evaluation\mohammed2input.sav



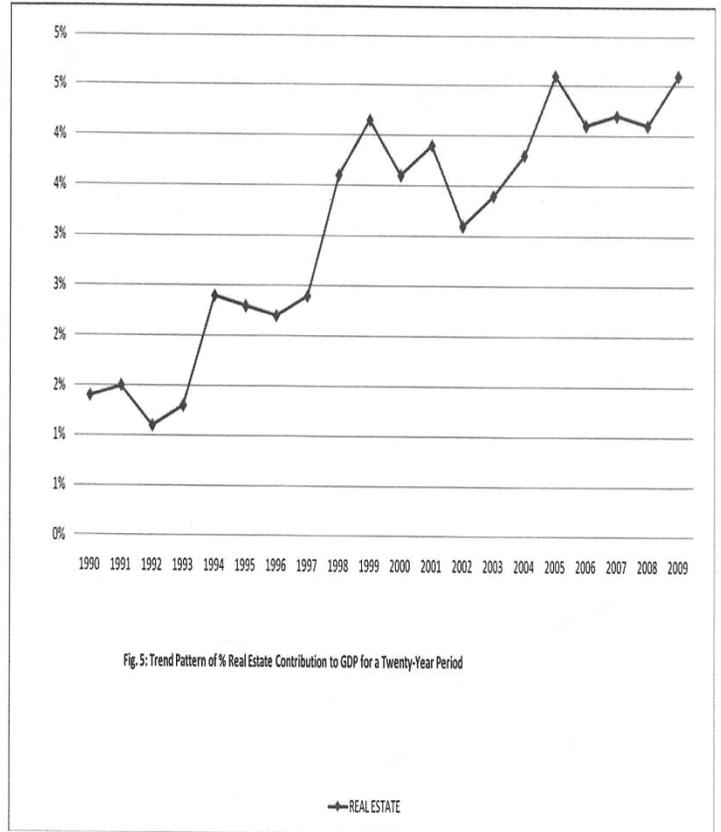
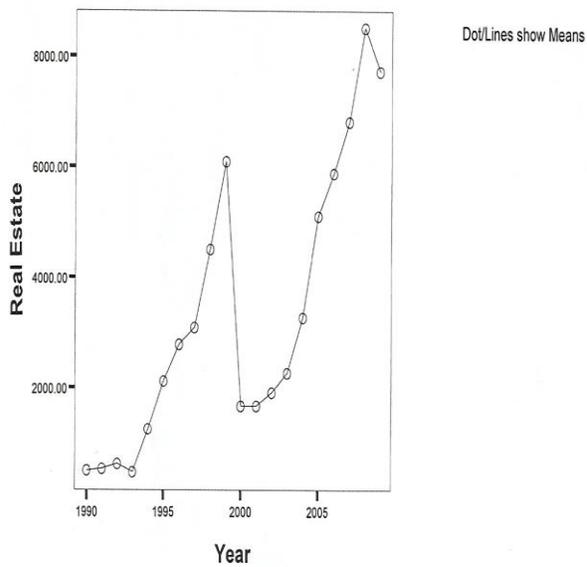
### 4.3.5 REAL estate sector and trend pattern % contribution to GDP

These sector pickup low at 1990-1993, then maintained an upward movement from 1995-1999.

Came down in 2000 and went up drastically from 2001-2009.

#### Interactive Graph

[DataSet3] C:\Program Files\SPSS Evaluation\mohammed2input.sav

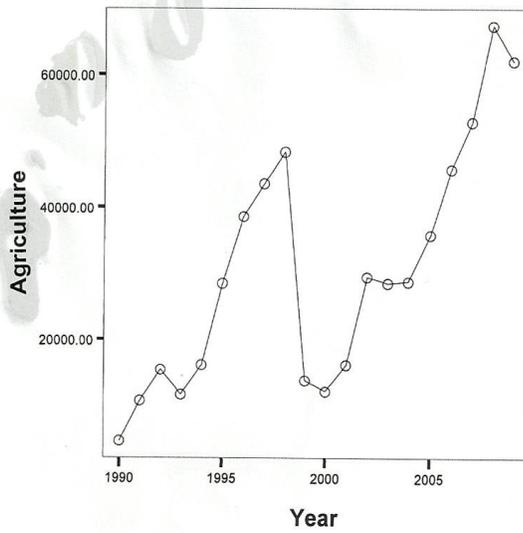


### 4.3.6 Agric sector and the trend pattern % of contribution to GDP

The Agric sector pick from 1990 and maintenance a steady flow up to 2000 when it drops and moved up to 2005 and up to 2009.

#### Interactive Graph

[DataSet3] C:\Program Files\SPSS Evaluation\mohammed2input.sav



Dot/Lines st

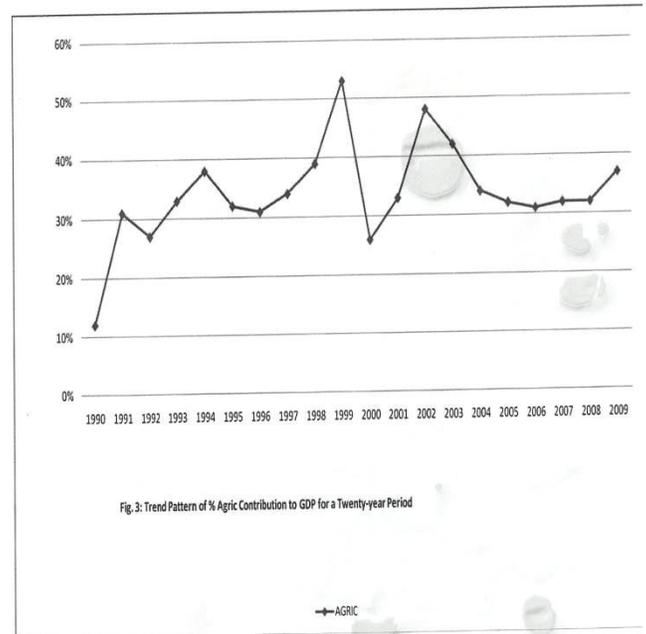
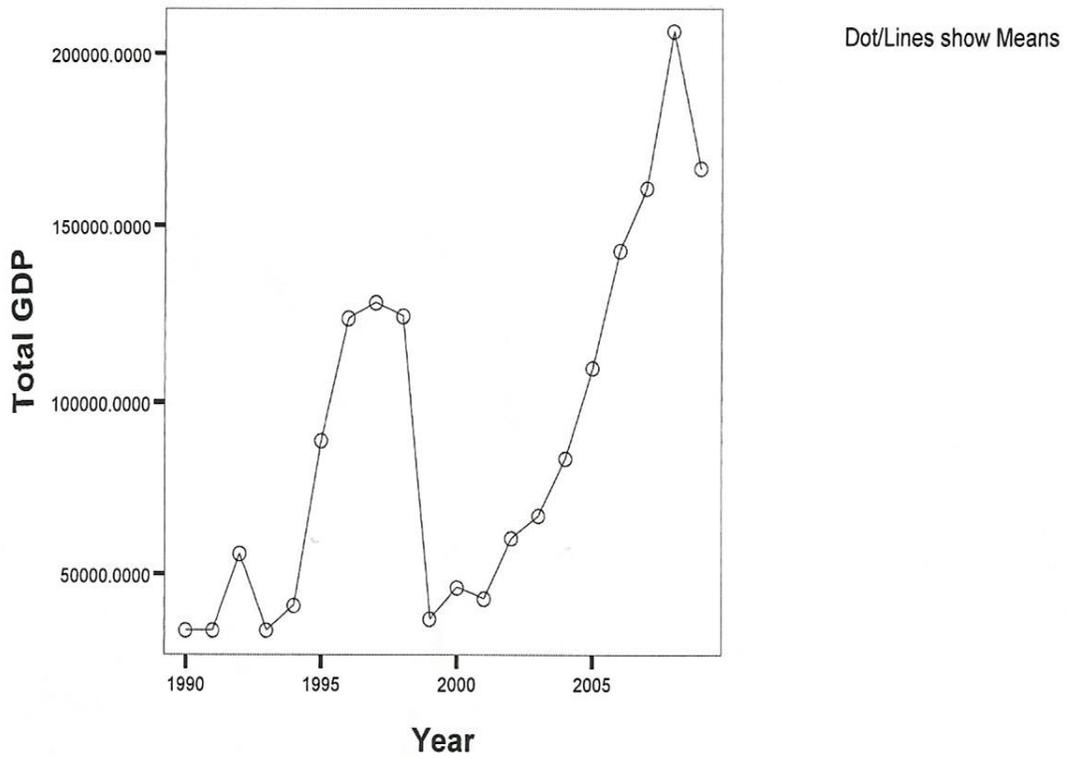


Fig. 3: Trend Pattern of % Agric Contribution to GDP for a Twenty-year Period

AGRIC

### 4.3.7 The trends of GDP over the years

The GDP for all the sectors over the study years was not constant, it was low in 1990-1994, military regime and picked up in 1995 to 1999 and went down in 2000 and gradually went up in 2009.



#### 4.4 Statistical Analysis of Data/Result and Discussion

Experiment 1 (building and construction vs Agriculture).

##### Relationship between building and construction vs Agriculture

VARIABLES		Types of Analysis	Regression equation	R <sup>2</sup> %	F <sub>tab</sub>	F <sub>cal</sub>	P <sub>value</sub>	Strengths of Relationship	RMK
X	Y								
Building & construction	Vs Agric	Linear	BC=790.748+0.14AS	4%	4.1	.859	0.36	Weak	NS
		logarithm	BC=2532.668+-128.6AS	5%		.099	00	Weak	NS
		quadratic	BC=2584.384+-130BC	32%		41	00	Weak	NS

Source: Authors Analysis of Data (Regression Analysis) (2011)

##### Observation and inferences

The above experiment had a negative correlation and the R<sup>2</sup> values were generally very low between 32-4 % respectively. The values of f-tabulated exceeded F-calculated. R<sup>2</sup> value went below the 50% level of significant. The inference was thus drawn that there is no statistical significant Relationship that exist between the two variables being tested. The null hypothesis (Ho<sub>2</sub>) which states that there is no significant relationship between the two variables is therefore accepted.

##### Experiment 2. (Building and construction Vs utilities)

Analysis result for the relationship between building and construction Vs utilities

VARIABLES		Types of Analysis	Regression equation	R <sup>2</sup> %	F <sub>tab</sub>	F <sub>cal</sub>	P <sub>value</sub>	Strengths of Relationship	RMK
X	Y								
Building & construction	Vs Agric	linear	BC= 362.658+5.012 UL	24%	4.1	5.9	.026	Weak	NS
		Logarithm	BC=2403.344+743.370 UL	23%		5.4		Weak	NS
		Quadratic	BC=148.559+006 UL	25%		2.8		Weak	NS

Source: Authors Analysis of Data (Regression Analysis) (2011)

### Observation and inference

Experiment 2:

The above experiment had a negative correlation and  $R^2$  value were generally very low between 25-23% respectively. The value of f-tabulated exceeded f-calculated. The  $R^2$  values went below 50% level of significance. The inference was thus drawn that there is no statistical significance Relationship that exist between the two variable been tested. The null hypothesis ( $H_{O2}$ ) which states that there is no significant Relationship between the two variables is therefore accepted.

### Experiment 3 (Building and construction Vs industry)

Analysis Result for the Relationship between Building and construction vs industry

VARIABLES		Types of Analysis	Regression equation	R <sup>2</sup> %	F <sub>tab</sub>	F <sub>cal</sub>	P <sub>value</sub>	Strengths of Relationship	RMK
X	Y								
Building & construction	Vs industry	Linear	BC=757.038+014 UD	5%	4.1	.95	0.34	Weak	N.S
		Logarithm	BC=2528.368+366 UD	3		.55		Weak	N.S
		quadratic	BC=1478.48+ 5.59 UD	8%		.76		Weak	N.S

**Source:** Authors Analysis of Data (Regression Analysis) (2011)

### Observation and inference

The above experiment has a negative correlation and  $R^2$  value were generally very low between 15 – 3% respectively. The f-tabulated exceeded f-calculated. The  $R^2$  values went below 50% level of significance. The inference was thus drawn that there is no statistical significant relationship that exist between the two variable been tested. The null hypothesis ( $H_{O2}$ ) which states that there is no significant Relationship between the two variables is therefore accepted.

### Experiment 4 (Building Construction Vs Transport)

Analysis Result for the Relationship between Building Construction Vs Transport.

VARIABLES		Types of Analysis	Regression equation	R <sup>2</sup> %	F <sub>tab</sub>	F <sub>cal</sub>	P <sub>value</sub>	Strengths of Relationship	RMK
X	Y								
Building	VS Transport Construction	Linear	BC=1263.385+009TP	2%	4.1	037	0.84	Weak	N.S
		Logarithmic	BC=497.111+97.TP	7%		.127		Weak	N.S
		Quadratic	BC=762.144+254TP	5%		.523		Weak	N.S

Source: Authors Analysis of Data (Regression Analysis) (2011)

#### Observation and inference

The above experiment has a negative correlation and R<sup>2</sup> value were generally very low between 7 – 5% respectively. The value of f-tabulated exceeded f-calculated. The R<sup>2</sup> values went below 50% level of significance. The inference was thus drawn that there is no statistical significant relationship that exist between the two variable been tested. The null hypothesis (HO<sub>2</sub>) which states that there is no significant Relationship between the two variables is therefore accepted.

### Experiment 5 (Building and Construction VS Real Estate)

Analysis Result for the Relationship between Building & Construction VS Real Estate

VARIABLES		Types of Analysis	Regression equation	R <sup>2</sup> %	F <sub>tab</sub>	F <sub>cal</sub>	P <sub>value</sub>	Strengths of Relationship	RMK
X	Y								
Building & Construction	VS Real Estate	Linear	BC=794.634+.131 RE.	7%	4.1	097	0.25	Weak	N.S
		Logarithmic	BC=1665.2666+8.46 RE	5%		2.2		Weak	N.S
		Quadratic	BC=482.347+98.552 RE	20%		097		Weak	N.S

Source: Authors Analysis of Data (Regression Analysis) (2011)

#### Observation and inference

The above experiment has a negative correlation and R<sup>2</sup> value were generally very low between 20 – 7% respectively. The value of f-tabulated exceeded f-calculated. The R<sup>2</sup> values went below

50% level of significance. The inference was thus drawn that there is no statistical significant relationship that exist between the two variable been tested. The null hypothesis ( $H_{02}$ ) which states that there is no significant Relationship between the two variables is therefore accepted.

### Experiment 6 (GDP Vs building and construction)

Analysis result for the relationship between GDP Vs building & construction

VARIABLES		Types of Analysis	Regression equation	R <sup>2</sup> %	F <sub>tab</sub>	F <sub>cal</sub>	P <sub>value</sub>	Strengths of Relationship	RMK
X	Y								
GDP	Vs Building & construction	Linear	BC= 571.506+007 GDP	9%	4.4	1.942		Weak	N.S
		Logarithmic	BC=3848.505+4523 GDP	4%		.921		Weak	N.S
		quadratic	BC=1254.171+ 1.43 GDP	13%		1.8		Weak	N.S

**Source:** Authors Analysis of Data (Regression Analysis) (2011)

### Observation & inferences

The above experiment had a negative correlation and R<sup>2</sup> value wave generally very low between 18- 9 % respectively the value of f- tabulated exceeded f calculated. The inferences was thus drawn, that there is no statistical significant relationship that exist between the two variables been tested. The null hypotheses ( $H_{02}$ ) which stated that there is no significant relationship between the two variables is therefore accepted.

### Experiment 7 (GDP Vs Agriculture)

Analysis result for GDP Vs Agric

VARIABLES		Types of Analysis	Regression equation	R <sup>2</sup> %	F <sub>tab</sub>	F <sub>cal</sub>	P <sub>value</sub>	Strengths of Relationship	RMK
X	Y								
GDP	Vs Agric	Linear	Ag= 23.798+341 GDP	95	4.4	362		Strong	SS
		logarithmic	Ag= 295964+ 29070 GDP	95		231		Strong	SS

		quadratic	Ag= 2463+.404 GDP	23		177		strong	SS
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**Source:** Authors Analysis of Data (Regression Analysis) (2011)

### Observation and inference

The above experiment had a position correlation and  $R^2$  value wave generally very high between 95-83 % respectively. The values of f. calculated exceeded f tabulated. The  $R^2$  values exceeded 50% level of significant relationship between the two variables is there rejected. The inference was drawn that there exist statistical significant relationship between the variables tested.

### Experiment 8 (GDP Vs Real Estate)

Analysis result for GDP Vs Real Estate

VARIABLES		Types of Analysis	Regression equation	$R^2$ %	$F_{tab}$	$F_{cal}$	$P_{value}$	Strengths of Relationship	RMK
X	Y								
GDP	Vs Real Estate	Linear	RE= -2331.1+040GDP	68	4.4	39		Strong	SS
		Logarithmic	RE=1128 +1.6486GDP	59		26		Strong	SS
		Quadratic	RE=32700+ 3209GDP	71		20		Strong	SS

**Source:** Authors Analysis of Data (Regression Analysis) (2011)

### Observation and inferences

The above experiment had a position correlation and  $R^2$  values wave generally very high between 71- 68% respectively. The values of f calculated exceeded f- tabulated. The  $R^2$  values has exceeded 50% level of significant. The inferences was thus drawn that there exist a statistical significant relationship between the two varieties tested. The null hypotheses ( $H_{O2}$ ) which stated that there is no significant relationship between the two varieties is therefore rejected.

### Experiment 9 (GDP Vs Utilities)

Analysis result for GDP Vs Utilities

VARIABLES		Types of Analysis	Regression equation	R <sup>2</sup> %	F <sub>tab</sub>	F <sub>cal</sub>	P <sub>value</sub>	Strengths of Relationship	RMK
X	Y								
GDP	Vs Utilities	Linear	UL= 1378.518 +138 GDP	58	4.4	25.6	0.00	Strong	S
		Logarithmic	UL= 7378+ 138 GDP	46	4.4	15.6	0.00	Weak	N.S
		quadratic	UL= 138.406+ 1.15 GDP	67	4.4	17.6	0.00	Strong	S

**Source:** Authors Analysis of Data (Regression Analysis) (2011)

#### Observation & inferences

The above experiment had a positive correlation and R<sup>2</sup> values were generally very high between 67- 46 % respectively. The values of f- calculated exceeded f –tabulated. The R<sup>2</sup> value went down that there exist a statistically significant relationship between the variables tested. The null hypothesis (H<sub>0</sub>) which stated that there is no significant relationship between the variables is therefore rejected.

### Experiment 10 (GDP Vs Transport)

Analysis regression for the relationship between GDP Vs transport

VARIABLES		Types of Analysis	Regression equation	R <sup>2</sup> %	F <sub>tab</sub>	F <sub>cal</sub>	P <sub>value</sub>	Strengths of Relationship	RMK
X	Y								
GDP	Vs Transport	Linear	TP. = 50.191 + 040 GDP	11	4.4	2.2	0.00	weak	N.S
		Logarithmic	TP. = 40577+3929 GDP	14	4.4	2.9	0.00	Weak	N.S
		Quadratic	TP. 5989 + 192 GDP	19	4.4	2	0.00	Weak	N.S

**Source:** Authors Analysis of Data (Regression Analysis) (2011)

#### Observation and inferences

The above experiment has a negative correlation and  $R^2$  value wave generally very low between 19- 11% respectively. The value of f- tabulated exceeded f- calculated. The  $R^2$  values went thus drawn that there is statistical significant relationship that exist between the two variation been tested. The null hypotheses ( $H_0$ ) which stated that there is no significant relationship between the variables is therefore accepted.

### Experiment 11 Multiple regression

GDP Vs Real sector,

VARIABLES		Types of Analysis	Regression equation	$R^2$ %	$F_{tab}$	$F_{cal}$	$P_{value}$	Strengths of Relationship	RMK
X	Y								
GDP	Vs real sector	Linear	$GDP = 24.005 + 17.9RS$	95	3.2	29	00	Strong	S

**Source:** Authors Analysis of Data (Regression Analysis) (2011)

### Observation and inferences

The above experiment had a positive correlation, and  $R^2$  value is very high indicating a strong relationship 95%. The value of f- calculated exceeded f–tabulated. The  $R^2$  value went below 50% level of significant. The inferences was thus drawn that there is a strong statistical relationship existing between the variables tested. The null hypotheses ( $H_0$ ) which stated that there is no significant relationship between the variables is now rejected.

### Experiment 12

Multiple of Building & construction Vs real sectors

VARIABLES		Types of Analysis	Regression equation	$R^2$ %	$F_{tab}$	$F_{cal}$	$P_{value}$	Strengths of Relationship	RMK
X	Y								
Building & Construction	Vs real sector	Linear	$BC = 656.564 + 17.9RS$	59	3.2	68	00	Strong	SS

**Source:** Authors Analysis of Data (Regression Analysis) (2011)

### Observation and inferences

The above experiment had a positive correlation and  $R^2$  value is high indicating a strong statistical Relationship between the variables tested. The value of  $f$ . calculated exceeded  $f$ - tabulated. The  $R^2$  value has exceeded 50%.level of significance. The inferences was thus drawn that there exist a strong statistical Relationship between the variables tested. The null hypothesis ( $H_0$ ) which stated there is no significant Relationship is therefore rejected.

### SUMMARY OF ALL EXPERIMENTS/ANALYSES

Exp. No	Variables		Types of Analysis	Result of Experiment					Inference	
	X	Y		Regression Equation	R <sup>2</sup> %	F <sub>tab</sub>	F <sub>cal</sub>	P value	Strength of Relationship	Rmk
3.1a	Building & construction	Vs Agric	Linear	BC790.748+ 0.14AS	4%	4.4	0.8	0.366	Weak	NS
3.2a	Building & construction	Vs utility	Linear	BC=362.658+ 5.012UL	24 %	4.4	5.9	0.26	Weak	NS
3.3a	Building & construction	Vs Industry	Linear	BC=757.038+ 0.14IU	5%	4.4	.95	0.342	Weak	NS
3.4a	Building & construction	Vs Transport	Linear	BC=1263.3+ 0.009TP	2%	4.4	.037	0.849	Weak	NS
3.5a	Building & construction	Vs Real Estate	Linear	BC=791 + .131RE	7%	4.4	1.3	0.215	Weak	NS
3.6a	GDP	Vs Building & construction	Linear	GDP=571+ 007BC`	9%	4.4	1.9	000	Weak	NS
3.7a	GDP	Vs Agric	Linear	GDP=23.798+ 0.341AS`	95 %	4.4	66	000	Very strong	SS
3.8a	GDP	Vs Utilities	Linear	GDP=1778.513 +138UL	58 %	4.4	25.	000	Very strong	SS
3.9a	GDP	Vs Real Estate sector	Linear	GDP=2331.1 +640RE	68 %	4.4	39	000	Strong	SS
3.10a	GDP	Vs Transport	Linear	GDP=50.191 +0.04058TP	11 %	4.4	2.2	000	Weak	NS
3.11a	GDP	Vs Real Sector	Linear	GDP=24.005+3.2RS	95 %	3.2	1.9	000	Very Strong	SS
3.12	Building and construction	Vs Real Sector	Linear	BC656.564 +17.9BS	59 %	3.2	3.2	000	Very Strong	SS

**Source:** Authors Analysis of Data (Regression Analysis) (2011)

## CHAPTER FIVE

### 5.0 SUMMARY

#### 5.1 Summary of results

The experiment conducted under the use of Anova analysis of variances, logarithm and Quadratic analysis of 13 variables, out of which 7 variables shows the rejection of null hypotheses and 6 shows the acceptance of null hypothesis. The 7 variables that shows the rejection of null hypothesis are

1. Building and construction Vs Agric (budget) using different types of experiment Linear 4%, logarithmic 5% and Quadratic 32% which signifies that there is no statistical significant relationship existing between the two variables tasted. Approximately 96%, 95% and 58% of variation in Building and construction is explained by factors other than Agric budget which are not included in this model.
2. Building and construction Vs utilities budget using different types of experiment linear 24%, logarithmic 23% and Quadratic 25% which shows that there is no statistical significant Relationship existing between the two variable tested. Approximately 76%, 77% and 75% of variation in building and construction budgets is explained by factors other than utilities budget which are not included in this model.
3. Building and construction budget Vs industry budget using different types of experiment linear 5%, logarithm, 3% and Quadratic 6%, where saw that there is no statistical significance relationship exiting between the two variable tested. Approximately 95%, 97% and 92% of variation in building and construction budget is explained by factors other than industry budget which are not included in this model.
4. Building and construction vs transport budget. Using different types of experiment linear 2%, logarithm 7% Quadratic 5% which shows that there is no statistical Relationship

existing between the two variables tested Approximately 98%, 93% and 95% of variation in Building and construction budget is explained by the factors other than transport budget which are not included in this model.

5. Building and construction Vs Real Estate, using difference types of experiment linear 20%, logarithm 7% and Quadratic 5% which shows that there is no statistical relationship existing between the two variables tested. Approximately 80%, 93% and 95% of variation in buildings and construction is explained by the factors other than Real Estate budget which are not included in these model.
6. GDP vs building and construction budget, using different types of experiment linear 9%, logarithm 4% and Quadratic 18% which shows there is no statistical Relationship existing between the two variables tested. Approximately 91%, 96% and 82% of variation in GDP is explained by the factors other than Building and construction budget which are not included in these model.
7. GDP vs transport, using different types of experiment linear 11%, logarithm 14% and Quadratic 19% which shows that there is no statistically significance Relationship existing between the two variables tested approximately 89%, 86% and 81% of variation in GDP is explained by the factors other than building and construction budget which are not included in these model.

The six variables that shows the acceptance of the null hypothesis are as follows.

1. GDP vs agric budget. Using different types of experiment linear 95%, logarithm 92% and Quadratic 83% which shows that is a strong statistical Relationship between the two variable tested, there  $R^2$  value went about 50% level of significance. Approximately 5%,

8% and 17% in GDP is explained by the factors other than Agric budget which is not included in this model.

2. GDP vs utility: using different types of experienced namely linear 68%, logarithm 59% and Quadratic 71% which shows that there is a strong statistical relationship between the two variables tested, there  $R^2$  values went about 50% level of significance. Approximately 22%, 41% and 29% in GDP is explained by the factors other than utilities budget which is not included in this model.
3. GDP vs Real Estate:- using different types of experiment namely linear 68%, logarithm 59% and Quadratic 71% which shows that there is a statistical Relationship existing between the two variables tested, there  $R^2$  value went above 50% level of significance. Approximately 32%, 41% and 29% in GDP is explained by the factors other than Real estate budget which is not included in this model.
4. Utilities, Real Estate and building and construction vs GDP using linear regression analysis, the  $R^2$  value obtained in this experiment is 84%, which shows there is a strong statistical relationship existing between the variables tested there  $R^2$  value went above 50% level of significance. Approximately 26% in utility, Real Estate and construction is explained by the factors other than GDP which is not included in this model.
5. Using linear regression analysis between Transport, Agric and building and construction budget vs GDP. The  $R^2$  value obtained in this experiment is 96% which shows that there is a strong statistical Relationship existing between the variables tested. The  $R^2$  value went above 50% level of significance. Approximately 4% variation in Transport, Agric and construction is explained by the factor other than GDP which is not included in this model.

6. Agric, transport and industry vs GDP using linear regression analysis the  $R^2$  value obtained was 92% which went above 50% level of significances that shows there is a statistically significance relationship existing between the variables tested. Approximately 8% variation in the sectors above is explained by the factors other than GDP which is not included in these model.

## **5.2 Conclusion**

Following the analysis of the data collected by the study to test the Research Hypothesis, the following conclusions were reached.

If we critically look at the Nigerian Economy today most especially the construction sector, it was observed from the experiment conducted using method of analysis that, there is no proper resources management and cost planning of resources. It was observed from the Analysis conducted that the Relationship of Building and construction to the other sectors of the economy is significantly not strong very weak, which rejected the null hypothesis ranging from 2% - 24% and building and construction vs Gross Domestic Product, 11%. Gross Domestic Product is one of the most frequently used measures of economic performance or development. And Major changes in the GDP of the Nation may in fact reflect severe problems or impressive gains. Similarly, the building construction industry is an essential sector to the process of development of an economy. The products from this sector such as Roads, dams irrigation work, schools, houses, hospitals, factories and other construction works are the very foundation on which development efforts and improved standard of living are established. The other sectors of the economy depend largely on the construction industry to improve efficiency and productivity.

The Relationship between GDP and the real sectors namely, Building and Construction, industry, real estate, transportation, agric and utility is significantly strong with  $R^2$  values ranges between 58 – 95% respectively that rejected the null hypothesis. GDP vs Real Sectors is 93% and Building and Construction vs Real Sector is 59%

This shows a very strong statistical relationship which accepted the null hypothesis

The study shows that the relationship of building and construction sector to other related sectors of the economy and GDP is very low and weak comparatively. For the period under review. This trends, if not checked could course sets back for the building and construction sector of the economy and the nation at large. Naira/dollar value was used to transformed and treat the existing data to further our research and experiment. During the pilot survey the existing data was used for the experiment which shows that all the variables tested were significantly strong that is all is well. But from our field survey all is not well with the Nigerian economy most especially the construction sector. Naira /dollar value was also used to treat the data and experiment was conducted for the whole period under review (1999- 2009). The result shows that the economy most especially the construction sector is backward and all is not well.

### **5.3 Recommendation**

1. The closeness of the real sectors and the gross domestic product ( $R^2$  58-97%) holds out the possibility of determining the level of demand to be put to the construction industry by the construction related sectors examine in this study. This study recommends that this analysis be carried out in order to enable policy makers, budgetary planners and cost planners plan adequately since the related sector contributes the bulk of construction and they depend on construction for efficiency and productivity.

2. The level of contribution of building and construction sectors to other construction related sectors of the economy and GDP ( $R^2$  2% to 24%) provides cause for worry efforts should be made to improved on this level in order to re-structure the balance of the national economy among the sectors. The trends over time is not static, it fluctuates and changes with time, therefore the nature of the trends should be considered in planning and resources planning and Dollar value should be considered during budgetary planning.
3. The high values of the  $R^2$  (59% to 95%) obtained from multiple regression analysis of the research data suggested that the contribution of the construction-related sectors to GDP are more accurately estimated on an aggregate rather than an individual basis. It thus recommend that construction related sectors of the economy should all be considered together as a whole in order to achieve good result.

#### **5.4 Implementation**

1. The government should set up a permanent body aimed at the responsibility of determining the level of demand to be put to the construction industry. The body also advices the government in positive ways to improve efficiency and productivity in the construction industry.
2. Diversifying the Nigerian economy will assist in-re-structuring the balance of the national economy among the sectors government should not priorities industry sector (oil) to the detriment of the construction sector and related construction sector, construction industry should be priorities since the industry form a foundation for the development of any nation.
  - ✦ Federal ministry of finance should consider the dollar value to form a basis for budget preparation and resources planning

- + Workshops and seminars on construction activities to educate the resource planners on the need to watch building and construction trends in relation to change in GDP and construction related sectors
3. The body set up by government should be made up of members drawn from all sectors of the economy. This is because construction trends to be influenced by all sectors that in one way or the other affects or needs each other. Such wide representation will ensure a multi-disciplinary approach to the derivation and implementation of economic solutions.

### **5.5 Areas for further studies**

1. To examine the contribution of building and construction sectors to other sectors not considered in this study from (1990-2009) e.g. Communication sector, health sector, and education sector.
2. Further studies should be carried out between 1990 – 1999 (10years) (military regime) and 2000 – 2009 (10years) civilian regime).for comparison

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