

**AN APPRAISAL OF THE DEREGULATION OF
PETROLEUM PRODUCTS PRICES AND ITS IMPACT
ON THE NIGERIAN ECONOMY**

BY

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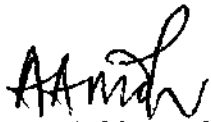
DEDICATION

This work is dedicated to my parents for sparing no effort to assist me in all my educational pursuits, my wife and two lovely kids Aisha and Salim.

DECLARATION

I hereby declare that this project is a product of my own research findings and that it has not been presented in any form anywhere for any certificate before this research was conducted.

All materials used from other sources have been duly acknowledged and properly referenced.



Mohammed Ahmed.

CERTIFICATION

This is to certify that this project entitled "An Appraisal of the Deregulation of Petroleum Products Prices and its impact on the Nigerian Economy" meets the requirements for the award of the Degree of Master of Business Administration (MBA) of Ahmadu Bello University, (A.B.U), Zaria and has been approved for its contribution to knowledge and literary presentation.

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ABSTRACTS

The oil boom of the 1970s transformed Nigeria into an oil rich state. It provided the financial base for huge public sector investment programmes at all levels of government. Apparently with this transformation, petroleum became the most important sector of the Nigerian economy. It accounts for more than 90% of foreign exchange earnings, three-quarters of federal revenue and some 20% of GDP. Hence, successive Nigerian governments used proceeds from oil revenue in the construction of capital projects, salary increases and heavy subsidization of goods and services. To add insults to injury governments officials perceived Nigeria's oil revenue as an avenue where they could get rich by corrupt means.

The 1980s were not particularly blissful for Nigeria in terms of wealth whose international price collapse precipitously. Nigeria was not prepared to absorb these shocks. Consequently dislocations on Nigeria's economy became inevitable. This ugly scenario was exacerbated by acts of embezzlement and squandermania on the part of dishonest government officials. Many policy reforms were put in place, shagari for instance introduced the economic stabilization Act in 1982 otherwise known as Austerity measures. Buhari introduced the counter -trade and Babangida introduced the structural adjustment programme in 1986 as an alternative to the IMF loan. SAP was meant to address the balance of payments disequilibrium which was brought about as a result of the dramatic fall in

international oil price. Unfortunately however SAP was not "home - grown" as the government tried to make Nigerians believe, instead it was the conditionalities of the IMF and the World Bank which were put in place.

Sooner than SAP was put in place, government in the spirit of deregulating Nigeria's economy announced the price increases of petroleum products through an administrative fiat. In most cases such prices hikes are accompanied by violent protests and demonstrations.

This study intends to look at the phenomenon of price increases of petroleum products and how it affects the Nigerian economy. Given the domineering role of petroleum in Nigeria's economy any price increase is tantamount to affecting the national economy in so many ways. The study will also focus on the sorry state of the downstream oil sector in terms of scarcity of petroleum products, low capacity utilization in the nations refineries, vandalism of oil pipelines etc and establish whether or not price increase will eliminate these problems. The study will also establish whether price increase of petroleum products is the best approach in the commencement of deregulation, given the fact that price increase is not synonymous with deregulation. Finally, this study intends to reveal whether or not, the deregulation of the downstream oil sector in Nigeria will be in the interest of the Nigerian economy and of course the Nigerian public. It is hoped that the outcome of the study will serve as a basis for making valid and reliable suggestions and recommendations to members of the public and above all the Nigerian government. This study intends to use

documentary sources, the questionnaire and the interview method as sources of data collection.

LIST OF TABLES

	Page
2.1 Nigeria: Growth in Agricultural Production (1990 – 2001)	16
2.2 Contribution of oil to export earnings in selected years (1960 – 1993)	19
2.3 Processing capacities of Nigeria's refineries	30
2.4 Refineries capacity utilization	31
4.1 Price, domestic refining and local demand for PMS, 1990 – 2003	56
4.2 Price, domestic refining and local demand for AGO, 1990 – 2003	57
4.3 Price, domestic refining and local demand for DPK, 1990 – 2003	58
4.4 Rates of inflation, 1990 – 2003	59
4.5 Pearson Correlation Analysis, 1990 – 2003	76
4.6 Pearson Correlation Analysis, 1999 – 2003	79
4.7 Regression for PMS	81
4.8 Trend values for PMS, 1990 - 2003	83
4.9 Predicted years for PMS	84
4.10 Regression for AGO	86
4.11 Trend values for AGO, 1990 - 2003	88
4.12 The predicted future trend values for AGO, 2004 – 2006	89
4.13 Regression for DPK	91
4.14 Trend values for DPK, 1990 – 2003	93

LIST OF FIGURES

Page

4.1	PMS Production, 1990 – 2003	60
4.2	AGO production, 1990 – 2003	61
4.3	DPK production, 1990 – 2003	61
4.4	Actual PMS production, 1990 – 2003	63
4.5	Actual AGO production, 1990 – 2003	64
4.6	Actual DPK production, 1990 – 2003	64
4.7	Daily domestic PMS demand, 1990 – 2003	65
4.8	Daily domestic AGO demand, 1990 – 2003	66
4.9	Daily domestic DPK demand, 1990 – 2003	66
4.10	Actual petroleum products production, 1990 – 2003	67
4.11	Daily domestic petroleum products, 1990 – 2003	67
4.12	Petroleum product prices, 1990 – 2003	68
4.13	PMS prices, 1990 – 2003	69
4.14	AGO prices, 1990 – 2003	70
4.15	DPK prices, 1990 – 2003	70
4.16	Petroleum product prices, 1990 – 2003	71
4.17	Rates of inflation (%), 1990 – 2003	72
4.18	PMS price and inflation, 1990 – 2003	73
4.19	AGO price and inflation, 1990 – 2003	73
4.20	DPK price and inflation, 1990 – 2003	74
4.21	PMS price	85
4.22	AGO price	90
4.23	DPK price	95

TABLE OF CONTENTS

	Page
Title Page	I
Dedication	ii
Declaration	iii
Certification	iv
Acknowledgement	v
Abstract	vi
List of Tables	viii
List of Figures	ix
Table of Contents	x

CHAPTER ONE: INTRODUCTION

1.1	Background to the study	1
1.2	Statement of the problem	4
1.3	Objectives of the study	5
1.4	Significance of the study	6
1.5	Statement of hypothesis and research questions	6
	1.5.1 Research Hypotheses	7
	1.5.2 Research Questions	7
1.6	Scope of the Study	8
1.7	Definition of key terms	8
1.8	Outline of the Thesis	12

CHAPTER TWO: LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1	Introduction	14
2.2	Review of the Nigerian economy	14
	2.2.1 Nigeria's descent into economic crisis and the associated policy responses	20
2.3	The development of the Oil industry in Nigeria	25
2.4	Arguments in favour of deregulation	32
	2.4.1. The need to remove subsidy	32
	2.4.2. Discouraging Smuggling	33
	2.4.3. Breaking the jinx of monopoly	34
	2.4.4. Efficient use of resources	34
	2.4.5. Availability of the products	35
	2.4.6. Prerequisite for attracting foreign investment and importation	35
2.5	Arguments against deregulation	35
2.6	Theoretical Framework	43

CHAPTER THREE: RESEARCH METHODOLOGY

3.1	Introduction	46
3.2	Research Design	46
	3.2.1 Historical research design	47
	3.2.2 Descriptive research design	48
	3.2.3 Explanatory research design	49
3.3	Research population	49

3.4	Instruments used for data presentation	50
3.5	Methods of data analysis	51

CHAPTER FOUR: PRESENTATION AND ANALYSIS OF DATA

4.1	Introduction	55
4.2	Presentation of data	55
4.3	Data analysis	75
4.3.1	Test of first Hypothesis	75
4.3.2	Test of second Hypothesis	77
4.3.3	Regression Analysis	80
4.4	Major Findings	96

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1	Introduction	98
5.2	Summary	98
5.3	Conclusion	100
5.4	Recommendations	101
	Bibliography	1104

CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND TO THE STUDY:

The battle for the deregulation of the prices of petroleum products in Nigeria has been raging since the 1980s especially when the Structural Adjustment programme began in July 1986 to cushion in some reform measures. Ever since, successive Nigerian governments have engaged in unprecedented price increases of petroleum products. This gesture has always irked the Nigerian citizenry, especially the masses, who often stage violent protests and demonstrations as a result of these increases. Since the oil boom of the 1970s prices of petroleum products played a central role in determining the strength or otherwise of the Nigerian economy, hence it is aptly important to undertake a study of this nature.

In 1990, the Premium Motor Spirit (PMS) otherwise called petrol was sold at 60 kobo and Automotive Gas oil or diesel sold for 50 kobo and kerosene, the most commonly used fuel for domestic cooking, was sold at 40 kobo. In 1991 PMS was sold at 70 kobo, diesel maintained its price of 50 kobo while kerosene was raised by 10 kobo. In 1993 the prices were ₦3.25, ₦3.00 and ₦2.75 respectively. However by 1995 the prices began to experience a quantum leap as PMS was sold for ₦11.00, diesel sold at ₦9.00 and kerosene ₦6.00. In 1998 the prices were ₦20.00, ₦19.00 and ₦17.00 respectively.

In June 2000 the Obasanjo administration raised fuel prices by 50 per cent, from ₦20.00 to ₦30.00 per litre. The increase was greeted with a violent protest nationwide led by the NLC. This almost crippled Nigeria's

tottering economy. It eventually forced the government to go into negotiations with the NLC. The negotiation led to a downward review of the prices, as petrol was pegged at ₦22.00 a litre, while diesel and kerosene sold for ₦21.00 and ₦17.00 a litre. It was at this juncture that president Obasanjo in his fervent desire and resolute determination to increase the prices of petroleum product or rather to end subsidies on domestic fuel consumption, set up a 34-member special committee on the Deregulation of petroleum products, supply and distribution. The committee was headed by Chief Rasheed Gbadomosi. On 1st January 2002 the Petroleum Products Pricing and Regulatory Committee (PPPRC) finally effected an increase in the pump price of petroleum products. Consequently PMS was raised by 18% from ₦22 to ₦26, Automotive Gas Oil (AGO) by 24% from ₦21 to ₦26 and Dual Purpose Kerosene (DPK) by 41% from ₦17 to ₦24. The NLC under its president, Adams Oshiomhole embarked on an ill-fated strike, because the government was quick to obtain a court order against the strike action. To all intents and purposes the strike proved to be a failure, as government could not be forced to reconsider its decision.

Again, barely two months in his second term in office, President Obasanjo took Nigerians by surprise with yet another price increment in June 2003. This invited another nationwide protests. At the end of it PMS, sold for ₦34.00, while AGO and DPK sold for ₦38.00. By October 2003, the government announced the complete deregulation of the downstream oil sector. The price of PMS immediately jumped to ₦39.50k in areas around Abuja and Lagos while the product sold between ₦43 - ₦47 in most Northern states.

Hence, the prices of petroleum products were again raised. Many reasons and indeed theories were propounded from many polemics to either support or condemn the price increase. It was argued that, the heavy subsidy on products prices created lucrative black markets not only in Nigeria but to other parts of West Africa. The big profit margin realized in black marketing made the perpetrators to be more daring and resilient. Locally, the middlemen manipulated the market inducing scarcity while squeezing the rest of the population as a result of abnormal profits. Another school of thought opined that, the drive towards price deregulation was not borne out by home circumstances, but rather the move was meant to satisfy IMF conditionalities, so that Nigeria could get a reprieve on its more than \$28billion debt (THIS DAY, vol. 7 No 2351 P.3 of Jan. 7,2002).

Further, the opponents of deregulation opined that, the price of fuel would shoot up and given the fact that Nigeria's economy is a mono-cultured one, such a gesture would cause untold hardship for the masses. They stressed that when workers demand for wage increase, government and pundits of deregulation always provide the usual textbook answer-it will cause inflation. But when government allows market forces to determine pump price, it does not cause inflation, even though this singular action has multiplier effects on almost all goods and services. Every hike makes the man on the street paying more for transport, hospital bills, schools, rent, food, clothes, etc.

This project therefore examines and appraises the impact of the deregulation of petroleum products prices on the Nigerian economy.

1.2 STATEMENT OF THE PROBLEM

Against the background of deepening economic crisis in Nigeria in the mid 1980s, successive governments began to introduce new policies embedded in economic liberalization. Consequently they embarked on subsidy removal, which translates in the increase of the prices of petroleum products. The specter of these increases became very alarming. From 20 kobo per litre in 1985/86 to ₦11.00 per litre in 1998, a whopping increase of 5,500 percent in a country where the real income of workers was steadfastly declining. And from ₦11.00 in 1998 to ₦26.00 in 2002, thus representing an increase of 236 percent. By June, 2003, PMS, AGO and DPK sold for ₦34.00, ₦38.00 and ₦38.00 respectively. And to all intents and purposes this asymmetrical rise in the prices of petroleum products is likely to continue.

The arguments advanced by supporters of deregulation was that, the exercise would arrest the scourge of perennial shortages, eliminate incessant smuggling, and curb black marketing. Deregulation would also bring economic prosperity, because proceeds realized would be used to promote socio-economic development. The government revealed that it could no longer continue with oil subsidy.

On the other hand, opponents of deregulation maintained that, it would only be an exercise in futility and moreover it was unwarranted and illogical. They argued that Nigeria's refineries were not operating in a cost-effective and cost-efficient manner. They pointed that; it was ironical for the government to be so hell-bent on the withdrawal of oil subsidy, thereby signifying increases, yet so adamant to pay living wages.

At any rate, government refused to yield to such popular protests as it continued with its policy of frequent price increase of petroleum products. Members of the public usually responded to such increases by embarking on violent demonstrations, which often paralyzed the economy. This situation if left unchecked poses a lot of problem to both the government and the governed. The best way this could be checked and sanity restored, is through a research of this nature.

1.3 OBJECTIVES OF THE STUDY

The onerous objective of this study is to find concrete and scientific solutions to the problems highlighted in the statement of the problem. However, in order to move from general to particular, the objectives of this research are narrowed down to specifics in the following areas:

- a. To establish the veracity or otherwise of government claim that, the deregulation of the prices of petroleum products is necessary
- b. To establish whether or not what government has been doing was price fixing through administrative fiat, or deregulation in an atmosphere being propelled by market forces.
- c. To verify whether or not fuel shortage in Nigeria was the problem of corruption, greed and avarice
- d. To verify whether the so-called fuel subsidy is the conduit pipe where corrupt NNPC and government officials enriched themselves with ill-gotten money at the detriment of the mass of Nigerians.
- e. Whether the phenomenon of deregulation is the only economic option available in rescuing Nigeria out of its economic woes.

1.4 SIGNIFICANCE OF THE STUDY

The significance of a study of this nature cannot be overstressed, given the fact that petroleum products play a central and indeed leading role in Nigeria's economic activities. It is rather sad to reveal that, apart from write-ups on the pages of newspapers, little attention was paid by researchers to actually identify the problem and find an answer or solution to it. This study therefore intends to fill this vacuum.

It is hoped that, the findings of this research and recommendations arising hereby will be of immense significance to government and may perhaps make government modify its policy orientation on the subject.

Lastly, the study is significant in the sense that it seeks to enlighten the average Nigerian on many issues concerning the petroleum business in Nigeria. The study also seeks to contribute some literature in an area where catalogue of available literature of this nature are somewhat scarce.

1.5 STATEMENT OF HYPOTHESES AND RESEARCH QUESTIONS

The research deemed it necessary to raise some guiding hypotheses and research questions with the view of making the research problem more specific, limited in scope and apparently more amenable to verification. The hypotheses and research questions are therefore meant to invoke deeper thoughts directed at specific problem areas. The following hypotheses and research questions are hereby raised.

1.5.1 RESEARCH HYPOTHESES

- i. There is no significant difference between an increase in the prices of petroleum products with an increase in the capacity utilization of Nigeria's refineries.
- ii. There is no significant relationship between an increase in the prices of petroleum products with an increase in the cost of living of Nigerians.

1.5.2 RESEARCH QUESTIONS

- a. Can the vast majority of Nigerians benefit from the deregulation?
- b. Has the economy of Nigeria developed to such a level that it can accommodate price deregulation?
- c. Can the income of the vast majority of Nigerians cope with the increase, especially the multiplier effect it will generate on the economy?
- d. How much was spent to repair the national refineries? Who got the contract and did Nigeria get value for the whopping amount spent?
- e. Who are the people involved in importation and will deregulation and subsequent repairs of the national refineries be of interest to such people?
- f. Can deregulation make any appreciable impact through arbitrary fixing of fuel prices by administrative fiat?
- g. Is deregulation synonymous with price hike?
- h. Is it a fact that the comatose situation of Nigeria's refineries was borne out by corruption and unpatriotism amongst NNPC staff and top government officials?

1.6 SCOPE OF THE STUDY

This work is essentially an appraisal of the deregulation of petroleum products prices more specifically as it impacts on the Nigerian economy. Naturally a number of products are realized from crude oil, however this study focused only on three key products otherwise called white products, viz, petrol, diesel and kerosene. Incidentally these three products constitute the bulk of crude oil refining and indeed importation. The time scope shall cover the period between 1990 to 2003. The fourteen-year life span of the study was meant to facilitate concrete and reasonable statistical inferences based on the hypotheses raised.

1.7 DEFINITION OF KEY TERMS

This research deemed it appropriate and expedient to provide a definition of some key terms as used in the body of this study. Most of these terms are subject to several interpretations by different would be readers and therefore the value of the research may be lost through misinterpretation. Hence a concise definition of the following terms will eliminate confusion and misinterpretation.

Barrel: a container which is used as a standard measure for crude oil and oil products. One barrel equals 159 litres. Barrels Per day (bpd or b/d) refers to the average number of barrels of oil produced from a well over 24 hour period or the number of barrels input or production of a refinery during a year divided by 365 less maintenance downtime.

- Black Market:** The system by which petroleum products are sold illegally by touts mostly.
- Black product:** This comprised of products from the heavy end of the distillation process, i.e engine oil, diesel oil, etc.
- Bonny light:** High Quality Nigerian crude oil exported from the Bonny terminal. It is one of the world's best grades.
- Bridging Claim:** Transportation subsidy paid to a marketer lifting petroleum products outside a depot approve zone, to meet emergency supplies, i.e from Lagos to Kaduna.
- Consumption:** Use of goods and services to satisfy human wants.
- Deregulation:** Decrease in or cessation of government regulation of the Economy. Deregulation is undertaken by the Nigerian Federal Government to demonopolize the control of petroleum sector of the economy and encourage the participation of private individuals in the ownership and control of the sector. In the long run, private refineries are expected to be established and the distribution of the product would be taken off the hands of the government.
- Devaluation:** Decrease in the value of the unit of money, i.e the naira, in relation to gold or other currencies, i.e the dollar.
- Direct foreign investment:** This refers to foreign investment in overseas countries
- Diesel Fuel:** (Automotive Gas oil) A general term covering light fuel oil derived from gas oil used in diesel engine

Down stream: The sector of the Oil Industry involved in activities between the loading of crude oil at the terminal and its use by the end-user. This includes refining and subsequent conversion to petroleum products, transportation and marketing of the finished products and related ancillary services see also upstream.

Dual Purpose

Kerosene (DPK): A medium light oil from the petroleum refining process intermediate between gas oil and gasoline, used for lighting and heating and as fuel for jet engines

Gasoline (Petrol): The fuel used in cars and motorcycles (also known as premium motor spirit-PMS).

Independent

Marketers: These are mainly private Nigerian companies and individuals involved in the distribution and marketing of petroleum products.

Major Marketers: Refer to large oil companies (upstream or downstream) typically multinational in origin, i.e Shell, Total, Texaco, Agip, etc, who are involved in the distribution and marketing of petroleum products.

Niger Delta: Nigeria's oil and gas rich southern province. It houses most of Nigeria's producing oil fields and terminals, such as Bonny, Brass, Qua, Iboe, Escravos, and Forcados.

NUPENG: National Union of Petroleum and Natural Gas workers. An umbrella labour union representing junior employees in Nigeria's petroleum Industry.

OFFSHORE: Drilling of crude oil on the land

ONSHORE: Drilling of crude oil under the sea

Petroleum Equalization

Fund: A fund set up by Decree 9 of 1975 in Nigeria to ensure uniform pricing of white Equalization Fund Products, by harmonising the inequalities arising from transport cost differentials.

PTF: Petroleum (special) Trust Fund. Established by Decree 25 of 1994 by the Nigerian government to collect proceeds from increase in the pump price of petroleum products'. Fund to be used for financing infrastructural development.

Refinery: A complex of technological equipment where crude oil is separated into light or heavy fractions, which are then converted into useable petroleum products or feedstock's for petrochemicals.

Smuggling: The systems by which Nigeria's petroleum products are sold illegally across the border.

Shut-down: Temporary closure of a refinery (processing plant) for the purpose of maintenance or in response to an emergency.

Turn-around Maintenance (TAM): periodic overhaul of a processing plant, for example a refinery, typically at two-yearly intervals for major refurbishment.

- Terminal:** An onshore transit installation that receives and stores crude oil and products from offshore production facilities via pipeline or tankers.
- Upstream:** The segment of the oil industry which covers all those activities related to the exploration, discovery and extraction of oil and gas, their treatment, transportation and delivery to designated export terminals or otherwise to processing plants, i.e. refineries.
- White products:** Products from the light end of the distillation process, such as petrol, gas oil, kerosene, naphta, etc.

1.8 OUTLINE OF THE THESIS:

This study, which aims at the appraisal of the deregulation of petroleum product prices and its impact on the Nigerian Economy, has five chapters in all. Chapter one is the general introduction, which discussed among other things, the statement of the problem, significance of the study and the hypotheses to be tested. Chapter two comprised of the Literature review where contributions by other scholars on the topic are presented and reviewed. A Theoretical framework is also presented in chapter two.

In chapter three the Methodology used in collecting and analyzing data is discussed, this is to enable any researcher following the same technique and procedure to equally arrive at similar results.

In chapter four, the data collected was presented and analysed with the aid of some statistical tools. While chapter five, which is also the last chapter, concluded the study and proffered some recommendations.

CHAPTER TWO

LITERATURE REVIEW AND THEORETICAL FRAMEWORK.

2.1 INTRODUCTION

This chapter contains a review of related literature and theoretical framework. The literature is extracted from past studies and related write-ups. On the subject. This served as the base for the successful take-off of this study and moreso this effort is necessary in order to avoid unnecessary duplication of another work thereby achieving originality. The review of the literature is organized into appropriate subheads to indicate the topics covered. The theoretical framework is meant to reinforce or reject some earlier theories developed on the need for the regulation of the economy by government.

2.2 REVIEW OF THE NIGERIAN ECONOMY

Nigeria was a colony of Britain. It attained independence in October 1960. Since then, the national economy has undergone fundamental structural transformation, needless to point out that, this did not translate into any appreciable and sustained economic growth and development. At Independence, Nigeria adopted the system of mixed economy as a strategy of promoting technological development, social progress and economic prosperity. Mixed economy as a system allows for both the government and the private sector to participate in the ownership, control and management of the economy. This trend explained heavy state intervention as manifested in government ownership of public enterprises such as NITEL, NEPA, NNPC, etc.

Prior to independence, the economy was at a rudimentary stage of development (FOS: 18), however with independence there were major changes, but even then, agriculture formed the core of economic activities. At that time, manufacturing and mining were at very low levels of development and the country's participation in the external trade was informed by the level of economic activities in agriculture. Agricultural commodities dominated the country's export trade while manufactured goods dominated imports.

At independence therefore, Nigeria inherited a mono-cultured economy, which was agrarian in nature. However, it suffice to indicate that, Nigeria is a country which is blessed with an abundance of natural, physical and human resources, including major oil and gas deposits, a variety of solid minerals, good agricultural land and a large labour force. Yet, with all these, successive governments have failed to diversify the economy so as to effectively exploit these natural resources.

The oil boom of 1973/74 brought with it a new dimension into the economic activities of the country (FOS:18). Shortly after, oil became the mainstay of Nigeria's economy. The sector earnings from crude oil greatly contributed to the Gross Domestic Product (GDP), government revenue and foreign exchange earnings. By 1980 (J.C. Anyanwu: 1997:5) the oil sector accounted for 22 percent of the GDP, provided 80 percent of government revenue and over 96 percent of export earnings. Apparently while the oil sector was experiencing a boom, the agricultural sector was experiencing an unprecedented steady decline. By 1963/64, agriculture was contributing as much as 61.50percent to the GDP. This fell to 14.63 percent in 1983, (J.C. Anyanwu: 1997:16).

The growth of the agricultural sector remained at 5.8 percent between 1990-1993 but reduced to 3.5 percent between 1997-1998 and further declined to 1.8 percent during the period 1999-2001. During the period 1999-2001 agricultural GDP showed an average growth rate of 2.6 percent, C. Ekpo: 2003: 9). Table 2.1 shows the percentage growth in agricultural production from 1990-2001.

The growth of this sector is disturbing given the fact that agricultural sector employs about 70 percent of the labour force with an expansive and rich arable land. Ekpo further argued that, the agricultural sector should grow between 7% and 10% in order to have any meaningful impact.

TABLE 2.1: NIGERIA: GROWTH IN AGRICULTURAL PRODUCTION, 1990-2001 (%).

	1990-1993	1994-1996	1997-1998	1999-2001
Aggregate	5.8	3.0	3.5	1.8
Crops	7.4	3.4	3.7	3.4
Staples	8.0	3.8	2.8	3.2
Other Crops	3.9	0.6	6.5	3.3
Livestock	0.9	2.5	0.5	2.7
Fishery	-13.2	3.1	6.8	3.8
Forestry	2.6	1.9	0.6	1.7

Source: Calculated from CBN Data in Ekpo: 2003.

When crude oil became the dominant sector of the economy it remained as the main engine of economic growth. Government reacted to the situation by embarking on huge investment in social, physical and economic infrastructures. The focus of economic activity shifted to international trade, international domestic finance, service, construction and real estate. Faraquee (1996: 240) pointed that federal expenditures increased, rapidly, doubling between 1973 and 1974, and again between 1974 and 1975. Within a decade of the oil boom, agriculture was relegated to the background and Nigeria became a major food importer, while production of export crops declined substantially.

Given the above scenario, Nigeria came to depend on a volatile international oil market for almost all of her export earnings as well as most of the revenues for federal, state and local governments revenue. The oil boom windfall enabled Nigeria to expand public investment particularly on infrastructure, more specifically in improving transportation and social services, in part to ameliorate the adverse effects of the civil war in Nigeria, which lasted from July 1967 to January, 1970.

It is pertinent to point that many public projects were undertaken without the requisite analysis of their long-term financial viability and need. Due to inadequate sense of priorities, poor management and information system, projects and programmes were implemented which had minimal impact on growth and development. White elephant projects were frequently given preference over projects that could stimulate the economy in a way to greatly benefit majority of the people. This ugly trend was exacerbated by inefficiency, corruption and economic mismanagement.

Moreover, most of these public investments did not create an in-built stabilizer for the oil dependent economy to avert the instability in the world oil market.

Structurally, the Nigerian economy has been dominated by two sectors. These were the agricultural and mining (i.e. petroleum) sectors. However in terms of revenue generation the economy has been monocultural. That is, it is centred on oil revenue. In the 1960s and the early 1970s the major revenue earner was agriculture and since the late 1970s, it has been the oil sector, (FOS: 1996:29). As shown on table 2.2, an oil earnings, which was only 1.4 percent of the total, export earnings in 1960 rose to 85.6 percent by 1974. Though its share fell to 79.6 percent in 1976 by 1984 it had risen to 93.5 percent. The situation was even more precarious between 1990 and 1993 when the economy depended almost exclusively on revenues from oil. By 1992, the share of oil in export earnings was 97.2percent. This situation remained with little or no change throughout the 1990s.

Dike (2001:128) posited that the perennial shortage of petroleum products significantly contributes to the level of inflation in Nigeria. This was because energy was used in the production and distribution of almost everything. The net effect was that production cost would shot up and prices of goods and services would increase.

TABLE 2.2: Contribution of oil to Export Earnings in selected years, 1960-1993.

Year	Oil Export (N million)	Share of oil in exports (%)
1960	5.0	1.4
1962	21.0	5.5
1964	40.0	8.6
1966	111.0	18.5
1968	45.0	9.6
1970	510.0	48.4
1972	1,176	61.2
1974	5,366	85.6
1976	6,371	79.6
1978	10,118	90.6
1982	8,122	93.4
1984	8,841	93.5
1986	8,426	93.1
1988	29,293	88.4
1990	105,710.4	92.2
1992	199,855.1	97.2
1993	210,182.1	96.1

Source: Federal Office of statistics (1996).

When Nigeria became an oil-based mono-cultural economy, the country's fortunes often rise and fall with the vagaries of international oil price. Consequently, Nigeria got infected with the "Dutch disease" which

inhibited the growth of non-oil exports as a result of over dependence on oil revenue.

2.2.1 NIGERIA'S DESCENT INTO ECONOMIC CRISIS AND THE ASSOCIATED POLICY RESPONSES.

The over dependence on oil revenue and the inadequate efforts to mobilize revenue from non-oil sources led to serious imbalances and distortions. Within a decade, the economy of Nigeria became import-export driven. In 1978, Soyode and Kayode (1985: 66), explained that, a 10.5 percent decline in Nigeria's crude oil production as well as a cut in oil price slowed down the rate of expansion of the country's economy. This was a further signal to crisis looming on the horizon. However, Nigeria's daily production rose from 1.826 million barrels per day in 1978 to 2.155 million barrels per day in 1979. That means even though economic problems began to surface in 1978, the year 1979 was a boom period in terms of oil exports.

The external sector, as manifested by import-export, significantly contributed to the economic crisis of the early 1980s. Public spending on imports rose steadily to the extent that, the country's oil earnings cannot support such outrageous importation of somewhat more of luxury goods. Hence Nigeria resorted to borrowing, thereby heralding the first signals of external dis-equilibrium, which sooner than later sent severe shocks on the internal economy. The first Jumbo loan was contracted by the military government of Obasanjo in 1978 (Shonekan, 1997:19). Further, Soyode and Kayode (1985:17) revealed that between 1977 and 1978 two Jumbo Euro-market loans-worth \$2.2 billion were contracted.

This marked a significant change in the country's pattern of borrowing in several ways. Prior to this, the country's external debts were owed largely to multi-lateral organizations and bilateral sources of concessional flows of financial resources. Such loans were usually tied to specific projects, carried very low rates of interest and had long (10 to 40 years) maturity. In contrast, the Euro-market loans were not tied to specific projects. The country has complete freedom in using the funds in whatever way it wanted. Their repayment period was shorter and the loans were contracted at variable or floating rates.

In 1980, (Soyode and kayode), Nigeria's export earnings stood at \$27.8 billion, this dropped to \$11 billion by 1983. Over the same period, Nigeria's foreign reserve declined from \$10.6 billion to \$1.3 billion. Interestingly, the import bill soared from \$22 billion in 1980 to N25 billion in 1981. This necessitated recourse to further deficit financing. By 1983 however, the level of fiscal deficit became worrisome. It has reached about 12% of the GDP as against 3-5% generally accepted as being compatible with macro-economic stability (Shonekan: 1997). By 1983, it stood at \$15.5 billion, due perhaps, to austerity measures. Still, this amount was well in excess of export receipts.

The mismatch between export earnings and the import bill led to a rapid accumulation of trade debts on letters of credit, bills for collection as well as an open account transactions. As this trade debt backlog threatened to close normal credit lines, the government had to commence refinancing and rescheduling arrangements. This led to the conversion of \$1.9 billion of these short-term trade credits into public medium term debt at floating interest rates. There remained however, a set of trade debt

arrears of about \$6 billion in the form of insured trade and guaranteed export credits. Those to whom this debt was owed insist on Nigeria's acceptance of an IMF structural adjustment loan as a pre-condition for any rescheduling of proposals. The loan in question was to the tune of about \$2.4 billion.

By mid-1981 there was a glut in the world of oil market. Prices of petroleum products slumped. Many problems lurking around the corner began to rear their ugly heads thereby compounding domestic macroeconomic imbalances. These included rising debt burden, inflation, unemployment, low capacity utilization, unstable national income, depressed export prices and shortage of capital inflow. Nigeria's past policy action in this regard became an albatross, which now requires a new resolute and drastic action.

Government used both monetary and fiscal policies to reduce the rate at which the economy was nosing into the doldrums. When the economic recession reached its peak in 1981, the Shagari administration enacted the Economic Stabilization Act in April 1982. The Act was popularly known as the Austerity measures. Its major elements were to restrict imports and cut public expenditure by 40 per cent (Soyode and Kayode: 1985). This action was meant to drastically reduce the country's huge Balance of Payments deficits and the growing external debt burden. In January 1983, the Shagari administration introduces further import restrictions (increase in duties, licencing, bans, etc).

In spite of the 1982 policy measures, the economy got worse as it reached a crisis situation in 1983-84 when oil prices further declined precipitously, by 45 percent from their 1980 level. To add insults to injury

Nigeria's indebtedness impede its access to foreign capital, unless it was ready to accept the IMF conditionality. Given Nigeria's unwillingness to devalue its currency, creditors refused to roll over short-term debt or to provide fresh capital. It was under this debilitating effect of economic decline, that the military seized power on 31st December 1983 and the new year ushered in General Muhammadu Buhari as the new military ruler.

The Buhari administration quickly introduced a tight monetary and fiscal policy. Some positive effect of this action was discernible. Inflation was brought down from 39.6 percent in 1984 to 5.3 percent in 1985 (FOS: 1996). Also the current account balance was reversed from its negative value averaging ₦3.393 billion between 1980-1983 to a positive value of ₦44.1 million in 1984 and ₦2.215 billion in 1985. The Buhari administration introduced counter trade. The Government refused to accept the policy reforms being proposed by the World Bank and the IMF. Rather than rationalize the import regime, the government made import controls more stringent. Even with this seeming achievement, the Buhari administration was not without its problems. Capacity utilization declined and plant closures were widespread due to lack of raw materials and spare parts. Accompanying the decline in imports and exports was a significant rise in domestic prices. Workers were being retrenched too.

It was against this backdrop that the Babangida administration took over power in August 1985 and spurred by another precipitous drop in oil prices,(Faruqee: 1996), it proclaimed a fifteen-month period of national economic emergency as of October, 1985. However, it soon became clear that these reforms were mere palliative measures. It also became clear that the problem cannot be resolved without some structural adjustment.

By December 1985 it was clear to the government that the economy needed to be turned around.

As a result, in July 1986 the government adopted a reform programme tagged, Structural Adjustment Programme (SAP). SAP was aimed, through the combination of exchange rate and trade policy reforms, at revitalizing the non-oil sector of the economy. It included, the introduction of stabilization policies in order to restore the balance of payment equilibrium and price stability. SAP emphasized the downsizing of Public sector and improving the efficiency of public asset management. Import licenses and agricultural marketing boards were eliminated, price controls were lifted and liberalization of the financial system was also put in place. Monetary and fiscal policies were used as the important instruments of stabilization.

SAP was therefore meant to restructure the economy, which depended on oil. In short, SAP was meant to diversify the economy, reduce inflation, restore internal and external balances and maintain a realistic exchange value for the Naira.

Anyanwu et'al (1997:455) pointed that the policy reforms under SAP were directed at the following areas.

1. Monetary

- Deregulation of the interest rates
- Establishment of a market-based foreign exchange (FOREX) system
- Tight monetary policy
- Devaluation

2. Fiscal

- Privatization and commercialization of Public enterprises
- Removal of subsidies
- Adoption of cost recovery measures in health care delivery and educational services.
- Cut in budgetary spending especially on public utilities

3. Trade liberalization

- Abolition of import licensing system
- General reduction in the level of import tariffs

From the foregoing analysis, it can be gleaned that from 1960-1985 there was a heavy government involvement in the ownership, control and the management of the Nigerian economy, although this was not without some repercussions. By 1985 the government felt that the minor reforms being undertaken by successive Nigerian governments since 1981 cannot meaningfully and effectively address the problems in their totality. It therefore embarked on an economic restructuring. It was in this perspective that the past and current drive towards the deregulation of the downstream sector of the oil industry can best be understood.

2.3 THE DEVELOPMENT OF THE OIL INDUSTRY IN NIGERIA.

Crude oil is a liquid and is made up of the mixtures of various substances. It is organic in nature and formed over millions of years from the fossil remains of small plants and animals (Eromosele: 1997:20). It essentially comprised of carbon and hydrogen and therefore it is aptly called a hydrocarbon. Nigerian oil is thus formed from the decomposition of aquatic substances. Over the years, the sediments exert great pressure

and high temperature occurs, as less oxygen is present at the depths. The buried organisms are therefore transformed into crude oil and gas. The Niger delta basin contains vast quantities of sedimentary rocks and crude oil is mainly found around such rocks, (Oremade: 1986:4).

The concrete search for oil in Nigeria started in 1937 and was pioneered by the Shell Petroleum Development Company of Nigeria (then known "Shell D'ARCY" and later Shell BP. The company was jointly financed by the Royal Dutch/Shell Group of companies. According to Oremade (1986:4), the first Commercial Oil was discovered at Oloibiri in January 1956 by shell. Toward the end of the same year a second discovery was made at Afam also in Rivers State or the Niger Delta area. By 1958 the first cargo of crude oil was exported. At the beginning, most of the multinational oil companies operating in the country had 100% equity in their operations. This trend lasted till 1973 when active government involvement in the marketing of crude oil began.

Between 1957 to 1958 production stood at 5,000 barrels per day (b/d), by 1960 it increased to 17,000 b/d and leapfrogged to 450,000 b/d by 1966 (NNPC: 1990). Naturally, as a result of the civil war in Nigeria this upward trend was slowed between July 1969 to January 1970. However by 1970 daily production had reached 1 million barrels. A peak production level of 2.4 million barrels per day was achieved during the second quarter of 1979. Presently with the problem of political instability in Iraq and legal tussle with Yukos in Russia, Nigeria produced over 2 million barrels per day with a price whose benchmark is almost approaching \$ 50 (CNN: 2004)

Government's interest in the oil industry began to acceralate in the 1970s. This led to increased participation by the federal government and changes in fiscal arrangement. Hence, the Hydrocarbon section was formed in 1963, Department of petroleum in the Ministry of Mines and Power came up in 1970 while in 1971 the Nigerian National Oil Corporation (NNOC) was formed to primarily market Nigerian Crude oil. Between 1973-1974 government was directly involved in the marketing of oil. It acquired 55 percent equity participation in all the companies producing crude oil in Nigeria, and this proportion was increased to 60 percent in 1979.

The government initially sold back the bulk of its participation oil to the foreign oil companies through a buy-back arrangement. Government sold 50 percent of its equity crude oil to other companies at a concessionary price. It sold another 25 percent to the companies as option oil. The remaining 25 percent was sold to third-party customers, i.e those buyers with no concession or stake in the country. The buy-back arrangement with the producing companies terminated in December 1975 giving way to formal sales agreement between NNOC and the various producing companies operating in Nigeria.

To all intents and purposes, the buy-back arrangement was meant as an interim arrangement. The third party sales were therefore meant to enable Nigeria develops its framework for international oil sales. Hence, NNOC entered into sales agreements effective September 1973 with two Independent oil companies, viz, Gelsenberg (a German company) and Tennaco (an American oil Company). The total sale of 40,000 b/d to these two companies represented the first successful efforts in direct marketing

of government crude oil to third party buyers. This tempo increased during the Arab-Israeli war, especially when in 1974 the government of Ghana started oil lifting of 10,000 b/d on the basis of government-to-government sales at the price of \$22.60 per barrel (NNPC: 1990).

Oil revenue to the federal government impacted on the economy in so many ways, this included among others: -

- Direct contribution to national income
- The generation of employment and manpower development
- Huge public spending on social programmes-health, education, etc.
- Increases in Nigeria's relative power position in international affairs.
- Phenomenal rise in federal budgets
- More ambitious development plans

Decree No. 3 of 1977 merged the Nigerian National Oil Corporation (NNOC) with the former Ministry of Petroleum Resources to form the Nigerian National Petroleum Corporation (NNPC) and it was empowered to (Anyanwu: 1997:64)

- i. Produce crude oil, refine, treat and process.
- ii. Market crude oil and petroleum products.
- iii. Provide and operate pipelines, tanker ships and other facilities for the conveyance of crude oil, natural gas and other products;
- iv. Construct, equip and maintain, tank farms and other facilities for the handling and treatment of petroleum and its products,
- v. Carry out research in connection with petroleum, its derivatives and promoting activities for the utilization of such research results.

- vi. Explore and exploit her oil resources directly alone or through contract by association (Joint Ventures) with other companies or through service contracts with these companies.

According to Eromosele, (1997:54) NNPC was ranked among the top ten in the developing world and among the top three in Africa and by far the largest single business entity in Nigeria. The federal government wholly owns it. NNPC is described in its mission statement as "a commercial, integrated, international oil company". Its vision is to become "a world class oil and gas company."

NNPC operates in Nigeria as a fully integrated company. Like an Octopus, through its eleven subsidiaries and several affiliates and Joint venture partners, NNPC engages in exploration, production, refining, marketing, pipelines, petrochemicals and trading. Its commanding presence was felt in the upstream and downstream segments of the oil and gas industry.

By 1989, NNPC owned four refineries. Two in Port Harcourt, one in Warri and one in Kaduna. They are of different age and capacity as summarised below:

- The old Port Harcourt Refinery: Commissioned in 1965, it has a full design capacity of processing 60,000 bpd of light crude oil. It was gutted by fire in 1989 but it was rehabilitated in 1993.
- Warri Refinery and Petrochemical Company: It was commissioned in 1978. It has a production capacity of 125,000 bpd of crude oil. It processes white products, fuel oil plus polypropylene and carbon black from the Petrochemical plant attached to it.

- Kaduna Refinery and Petrochemical Company: It was commissioned in 1980. It has an installed capacity to process 110,000 of light and heavy crude oil. It has a fuel plant and a lube plant with a petrochemical plant attached to it as well. In addition to conventional products, it yields base oil, waxes, solvents and linear alkyl benzene (LAB) from its petrochemical plant.
- The new Port Harcourt refinery: It was commissioned in 1989. It has a production capacity of 150,000 bpd. It produces white products and fuel oil.

Table 2.3 PROCESSING CAPACITIES OF NIGERIA'S REFINERIES.

S/No	Refinery	Date Commissioned	Installed Capacity (Bpd)
1	Port Harcourt 1	1965	35,000
	Port Harcourt Expanded	1971	60,000
2	Warri	1979	125,000
3	Kaduna	1980	110,000
4	Port Harcourt II	1989	150,000
5	Total		445,000

Source: Report of the special committee on the Review of Petroleum Products, Supply and Distribution, 2000.

TABLE 2.4 REFINERIES CAPACITY UTILIZATION**(1997-2001)**

S/No	Year	Capacity Utilized %
1	1997	48.02
2	1998	33.43
3	1999	40.89
4	2000	22.28
5	2001	50.18

Source: NNPC Annual Statistical Bulletin, Jan-Dec. 2001.

Given the above pathetic and worrisome situation of low capacity utilization by NNPC's inefficient refineries, the government resorted to importation to meet up with Local demand. Within a decade of its existence (1977-1987), the NNPC has become an octopus riddled with unbridled corruption, poor management, sabotage, unnecessary government interference, lack of the mandatory turn around maintenance (TAM) every two years and indiscipline. As of the year 2000, Nigeria had to import 80 per cent PMS for domestic use. Weekly Trust (Feb. 28-March 5 2004) pointed that, between 1999-2000, the four refineries were operating at an average of 40% of installed capacity.

The NNPC problem and indeed a myriad of other sinister problems, on Nigeria's economic scene made successive Nigerian government to embark on a policy of deregulating the downstream sector of the oil industry as enshrined under the tenets of SAP since 1986.

The dispute or arguments on the deregulation of the downstream sector can be categorized into two polemics, namely the protagonists, i.e.

those who hold a fervent opinion in support of the deregulation and the antagonists, those who hold a fervent opinion against deregulation. The federal government and its ilk comprising of the IMF, the World Bank, Paris Club, London Club, etc were the protagonists. On the other hand the antagonists were led by the Nigerian Labour congress (NLC), the Academic Staff Union of Universities, other labour organizations, members of the public, etc.

However, it is pertinent to point out that apart from government who made an effort to rationalize the phenomenon of deregulation virtually all other labour organizations and members of the public were not in support of the exercise. Therefore most of the available literature can be content analysed from the papers and interestingly most of the write-ups were not supporting the deregulation.

2.4 ARGUMENTS IN FAVOUR OF DEREGULATION

Aremu (2001:36) identified what he called official reasons for price increases. The Government too, always advances a number of reasons for price hikes. This can be summarized as follows:

2.4.1 THE NEED TO REMOVE SUBSIDY:

The government claimed that as a result of devaluation of the naira it had to subsidise prices of oil products. This often results in 100 percent subsidy. In 1987, the then minister of petroleum (Rilwanu Lukman) posited that production costs of local refining had increased and government had to offer subsidy to the value of ₦6.8 billion per annum. In the year 2000, government claimed that international price of crude oil has increased from

\$9.50 in 1998 to \$30 per barrel in April 2000. Given the fact that by year 2000, government has had to import fuel for domestic needs, it felt shortchanged at buying at international price, bearing the cost of importation and then selling at a subsidised price. This trend according to NNPC made it uneconomical to sustain import at the official price. Subsidy therefore had to go. The NNPC argued that the burden of annual subsidy as at the year 2000 totaled N202 billion Naira (Aremu: 37).

Another argument on subsidy was that it enhanced a lot of distortions in the economy and if it was removed prices of petroleum products would be the same with those of Nigeria's neighbouring countries and therefore smuggling of the petroleum products would become less attractive. Government was always quick to add that the removal of subsidy would boost government revenue, which can then be used in the provision of basic infrastructures.

2.4.2 DISCOURAGING SMUGGLING

The assumption was that increase in the products' price would discourage and eventually eliminate smuggling. The belief was that smuggling always breeds an atmosphere of artificial scarcity in Nigeria because proceeds arising from oil smuggling were more lucrative compared to what obtained in the domestic market. The black market was so lucrative in West Africa that driving a 30,000 litre fuel tanker across the Seme border earned the driver at least N200, 000 in instant profit. The big profit margin made the smugglers more daring.

2.4.3 BREAKING THE JINX OF MONOPOLY:

With deregulation, other refineries to be established would commence processing of petroleum products. In the interim the major and independent Marketers could import the product. This would make Petroleum products available in abundant supplies, and prices would be lower to the consumer. Competition would thus be promoted as private entrepreneurs commence the business of setting up private refineries or importing the product. The price war likely to ensue from competition would compel the suppliers to reduce their prices to what consumers are willing to buy. That means a situation of the marketing maxim which says "customer is always king" would be achieved. Apparently, the monopoly of NNPC would be phased out.

2.4.4 EFFICIENT USE OF RESOURCES

The government argued that maintaining domestic price at a lower level than international prices encouraged inefficient use of the products as wastages by car owners increased. It was also argued that only the elite had access to petroleum products at lower prices and this was at the expense of the teeming masses who had to queue for several days without getting the product. Therefore deregulation would put an end to a situation whereby only elite benefit from the subsidy. The government claimed that the additional revenue generated would be used for development. This in the long run, would benefit the masses. Apparently, this captures the modernization theory of the trickle down effect.

2.4.5 AVAILABILITY OF THE PRODUCTS

Government posited that the permanent solution to the perennial shortage was to deregulate the entire sector. With this development, prices of the products would be determined by the interplay of market forces. Single uniform pump prices were expected to disappear and be replaced with multiple competitive prices or "appropriate prices" which would result in full cost recovery. This action it was believed, would make the product readily available at all time.

2.4.6 PRE-REQUISITE FOR ATTRACTING FOREIGN INVESTMENT AND IMPORTATION

Government also argued that the prevailing official prices were not attractive for oil marketers to import petroleum products let alone consider investment in the downstream sector i.e. by way of setting private refineries. A regulated price regime would not serve as an incentive to private companies. Supporters of the deregulation showed that, coca-cola was most of the time more expensive than petrol. Yet to produce a bottle of coke was by far cheaper than a litre of petrol. This abnormal situation should therefore not be allowed to continue.

2.5 ARGUMENTS AGAINST DEREGULATION

The antagonists were to all intents and purposes against the efforts of government towards deregulation. They provided a number of reasons as to why the downstream sector of the oil industry in Nigeria should not be deregulated. In addition they offered constructive criticisms of the reasons advanced by NNPC and government for the deregulation. The pundits

against deregulation posited that, it was a wrong diagnosis of the problem, the decision by government to embark on deregulation in a debt riddled and poverty stricken economy.

Arowolo (The Punch: 2001.P3) posited that it was a paradox when one considers Nigeria as a nation, which imports what it has and export what it does not have. For example, during the Abacha administration, Nigeria exported democracy to Sierra Leone by helping to reinstate Tejah Kabbah who had been toppled in a putsch. On the other hand at about the same period there was a massive importation of mostly toxic and sub-specification fuel. He argued that, Nigeria seems to have a curious one-legged economy whose supply side is disabled or even dead to the huge and overwhelming market around it. He stressed that the cost of refining at NNPC was bogus and deceitful because the cost of graft and inefficiency were built into the present fuel price. Therefore price hikes were meant to recover what corrupt NNPC and government officials siphoned.

Arowolo pointed that; price deregulation was difficult in a market that was distorted by the overbearing presence of government. Even with the complete deregulation as at October, 2003, government still maintains its refineries and prices were fixed more or less through administrative fiat. He maintained that, deregulation without diversifying the local supply was tantamount to macro-economic instability with other far-reaching effects.

Oko (Vanguard: 2001:29) was of the opinion that government cannot claim to be subsidising the price of petroleum products by merely comparing the pump price in Nigeria with those of other countries especially neighbouring countries that do not produce oil as well as by comparing the \$9.50 per barrel at which NNPC sales crude to refineries,

with the average spot price of ₦25 per barrel. He argued that NNPC was characterised by a high incidence of inflation of contracts. This invariably increases its cost of production. Hence, government was in real terms not subsidising anything but monumental corruption being perpetrated by some NNPC and government officials. According to Oko, it was unjust and inequitable for government to punish the masses by claiming to be removing non-existent subsidy.

Oko, stressed that the claim by government that windfall from such price deregulation would be used to execute people-oriented programmes like the poverty Alleviation programme (PAP) was mere idle talk. According to him, apart from the Petroleum Trust Fund (PTF), all other agencies established to harness the windfall from price increases were conduit pipes for squandermania. The examples of NDE, FSP, FEAP, Peoples Bank and more recently the Poverty Alleviation Programme (PAP) were cases in point.

Oko advocated differential pricing before any form of deregulation can start. This gives the marketers a leeway to vary their pump prices from one filling station to another, from one part of a city to another and from state or town to another. He pointed that the present Petroleum Equalization Fund (PEF) was fraught with gross abuses. This was because marketers were hardly paid their bridging cost, months after submitting their claims and even when they do get paid, the approving officials demand excessive gratification, to the extent that the whole transaction become highly unprofitable, hence the temptation to take the products across the borders.

Ejiofor observed that the increase in the prices of petroleum products would not stop smuggling. Local increase he explained would result in a corresponding price increase in neighbouring countries. This became obvious given the fact that some of Nigeria's neighbours were not producers of oil (Vanguard: 2001). While Babarinde (Tribune: 2001:17) was of the conviction that the perennial fuel scarcity was borne out by corruption, greed and avarice amongst the NNPC staff. Ewulu writing in Daily Trust (June 24:2003:14) argued that for some members in the private sector and others in business, the fuel hike would negatively affect the real sector, as the increase would translate into higher production cost.

Shekarau (weekly Trust: July 12-18 P.4) argued that the NLC strike of June-July 2003 has wrought incalculable damage on the economy. He explained that the Organised Private Sector (OPS) pegged the economic losses at ₦45 billion, thus as at the time the strike entered its fifth day on July 4th. Reports from the manufacturing sector as at July 4th, showed that all major companies shut down their operations with about 13 of them indicating a loss of about ₦11 billion in sales revenue. These companies included Nigerian Bottling Company, Cadbury Nigeria PLC, Nestle Nigeria PLC, May and Baker PLC, Union Dicon Plc, etc.

The stock market performance according to Shekarau, also declined during the period of the June 2003 strike. For instance stock market capitalization which opened at ₦896.880 billion on Monday June 30th close at ₦895.581 billion sustaining a loss of ₦1, 299 billion or 0.14 percent. In addition major stocks fell to the strike causing massive losses to equity investors to the tune of ₦5 billion. Stocks affected included Julius Berger Nigeria PLC at 482 Kobo per share with a total loss of ₦1.08 billion,

Unipetrol at 100 kobo per share recorded at loss of ₦156 million, Mobil also at 100 kobo per share incurred a loss amounting to ₦216 million.

However the losses indicated above do not include the informal sector of the economy, which employs about 60 percent of Nigerians. These losses cannot be quantified in view of the enormity of people employed in the sector. Similarly the losses incurred by the three tiers of government-federal, state and local through unpaid taxes from business ventures was equally enormous. Total man-hours were lost in both the private and public sectors, as offices remained closed during the period.

Ayobolu (Business Times: July 14-20:2003:P48) asked a series of rhetorical question to show that the government was not really committed in using the windfall from price increase to provide social amenities and infrastructural development for the common man. He asked: was ₦320 billion not provided for the construction and maintenance of roads between 1999 and 2003 but where were the roads? Was about ₦250 billion not spent on NEPA in the last four years, was light stable? Are 70 percent of Nigerians not living below poverty line according to UNDP report? Is unemployment not pervasive? He countered the argument of NNPC on the cost of refining a barrel of crude oil at \$0.07 or ₦9.80k. He explained that Nigeria's crude oil being low in sulphur content was about the cheapest to refine in the world. Therefore it takes between \$0.01 and \$0.03 for a barrel or an average of \$0.02 (₦2.80) to refine the Bonny light crude oil.

Uzor (This Day: June 12:2000:17), in his article "two-handed Economist for Obasanjo" quoted Herbert Hoover, one time president of the United States, who, overwhelmed by different advisers around him said

“please find me a one armed economist so that we will not always hear on the other hand”. He stressed that president Obasanjo was towing this line since he was of the firm conviction that deregulation was a fait accompli and therefore there was no any other way to solve the problem. He said economist with two hands would have advised the president from two sides of the divide. He compared the pricing and wage levels and showed that in the United States a litre of PMS, costs about 70 cents, at exchange rate of ₦130 to \$ this approximates to ₦91 per litre of PMS. The two handed economist would look at other variables; minimum wage in U.S. was \$6 per hour. At the rate of eight hours a day, the American cleaner earns \$48, which aggregates, to ₦6240 per day. This amount was more than what the Nigerian cleaner earns in a month.

On the average a low income American earns about \$1500 a month, this translate to ₦195, 000 a month for a Nigerian worker. Hence, Uzor was of the opinion that, the economic pundits of government should put the minimum wage at ₦195, 000 and thereby can feel free to charge the American price per litre in Nigeria.

The Editorial of Guardian (16:2003) was of the conviction that intermittent price increases was not analogous with deregulation, liberalization or privatization. It objected to the June 20 2003 quantum increase in the prices of petroleum products, and maintained that, deregulation should be premised on an attempt to bring in private entrepreneurs into the downstream sector through which private refineries can be set up and the distribution of the product would be taken off the hands of government. Even with the purported deregulation of the downstream oil sector in its entirety by October, 2003, prices were still

fixed through administrative fiat instead of allowing the interplay between demand and supply to determine prices.

Therefore what exist in most cases were price hikes not deregulation. The paper believed that the existing local refineries should be made functional and efficient and moreso new private refineries should be licensed so as to adequately and competitively meet up with the growing domestic demand.

Dan Halilu (Daily Trust: 2003:32) argued that the issue of smuggling was a smokescreen being used by government to increase prices. He attributed the failure of government to curb smuggling as official insensitivity and executive failure. He rhetorically asked: why should Nigerians bear the brunt of failure of our security agents to prosecute smugglers of petroleum products and inefficient management by NNPC? If the Nigeria Immigration and Custom Services cannot perform the role assigned to them, why should the common man be subjected to unnecessary increase for their failure? He posited that the police have done nothing to check the internal black market, which does not only aggravate economic hardship, but innocent people were killed by means of adulterated kerosene. He opined that there should be a reorganization at NNPC.

Again, the claim by the federal government that it was subsidizing petroleum products to the tune of over ₦250 was not actually true. Capacity utilization of the refineries can only meet 40 percent of total demand of 30 million litres per day (Anaeto E. June 26: 2003). The government supplies 300,000 barrels of crude oil at a concessionary price of \$18.00. Out of this NNPC refines about 90,000 locally while the

balance 210,000 was exported and sold at an international price of \$30, now over \$40. Considering a profit margin of \$12-\$22 per barrel at an exchange rate of ₦130 to a \$ this translates into ₦600.8 million daily. This in effect means that subsidy was not real as it did not stem from government coffers but rather from the allocation of crude oil to NNPC, which was meant to be refined for local consumption.

The corruption at NNPC became so glaring when the Revenue Mobilization and Fiscal Commission claimed that ₦300 billion was not accounted by NNPC in the year 2002 (Business Vanguard: June 26: P 22). This statement begs a number of questions and the answers would to all intents and purposes pinpoint at the monumental corruption being carried at NNPC.

Given the fact that, the government incurred a budget deficit last year of ₦304.8 billion last year, little wonder then, it was talking of withdrawing ₦250million as annual subsidy, Gabriel (Vanguard: P 23). He established a link between debt rescheduling and fuel price increase. He argued that, Nigeria with an external debt overhang of more than \$30 billion coupled with an excruciating budget deficit, was caught between the devil and the deep sea. Government action therefore was to oblige to the dictate of IMF and other international finance institutions. Therefore to qualify for debt rescheduling and the proposed medium term economic package for the nation, Nigeria accepted to increase prices. Without mincing of words, it can be posited that the exact size of Nigeria's debt remains a mystery.

Government however due to insincerity of purpose could not admit in the public, that external hands of the IMF and World Bank were manipulating domestic prices.

2.6 THEORETICAL FRAMEWORK

The origin of deregulation could be traced to the period of industrialization in Europe when the emergent capitalists were advocating for *laissez-faire* meaning less government intervention and free trade. The Classical theorists of the 18th and 19th centuries, led by Adam Smith (1723-1790) were of the opinion that, the state should merely provide an enabling environment, especially by way of the maintenance of law and order for the private sector to thrive. He maintained that the economy should be owned and controlled by private entrepreneurs based on the dictate of the market forces, which he described as the invincible hand.

However, even before Smith and others in the Classical School, the mercantilists advocated for a strong state. They maintained that, the state should be interested in economic development. In France, mercantilism was known as *colbertism* (Bathia: 2001,16). This enabled the government to own and control state enterprises. The mercantilists were known with the adage, which says: Instead of importing fish catch your own fish.

The Classical School was criticized by a crop of scholars who formed what came to be known as the Nationalist School. Alexander Hamilton (1757-1804) advocated limited protection to eligible industries, till the protected industries were able to face foreign competition on their own. Still arguing from the Nationalist perspective, Daniel Raymond (1786-1849) posited that, political economy should be primarily concerned with national

wealth rather than individual riches. He criticized the Classical school for advocating absolute advantage. He stressed that, no single branch of human labour should be considered superior to the other. Therefore agriculture, manufacturing and commerce ought to develop in harmony with each other than a situation whereby one is given preference to the others within the national economy.

Welfare economists also identified some imperfections fraught with the capitalist's economy. Marshall for example recommended the use of fiscal policy, taxation and subsidies as a way for encouraging increasing returns industries and discouraging the diminishing returns ones. Johann Gustaf Knut Wicksell (1851-1926) opened the floodgate of monetary economics (Bathia: 428). He advocated that, public utilities should adopt marginal cost pricing rather than average cost. He also supported selective nationalization of industries.

John Maynard Keynes (1852-1951) in his "General Theory of Employment, Interest and Money" published in 1936 precipitated the Keynesian Revolution. Keynes attempted to explain the causes of the malfunctioning of a modern capitalist economy. He suggested that governments should embark on public investment programmes as a panacea for the persistent distortions in capitalist economies

Musgrave and Musgrave (1989:4) showed that the modern capitalist economy was a mixed system in which both the public and private sector interact with one another. The economic system was therefore neither wholly public or wholly private. Musgrave and Musgrave identified three major functions of government in an economic system.

- (i). **THE ALLOCATION FUNCTION:** The market system cannot provide certain goods, referred as social goods. In some cases the market fails entirely while in others it can function in an inefficient way. Market failure therefore explained the need for government intervention.
- (ii). **THE DISTRIBUTIVE FUNCTION:** This is used to promote equity in income and wealth distribution. It should be geared towards poverty reduction. It is implemented through tax policies, and the onerous lies on government.
- (iii). **THE STABILIZATION FUNCTION:** This is used to maintain price stability, high employment, high and sustainable economic growth and favourable balance of payments. Monetary and fiscal instruments are used to deal with the stabilization function.

In attaining these goals, there was the need for massive government intervention and role. This was in tune with the Keynesian theory that swept the World from 1936. From these theoretical postulations, it can be argued in concrete terms, that the domineering role of private sector in the ownership and management of the economy does not at all times translate positively. At other times government would be required to be actively involved in the ownership of the national economy.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 INTRODUCTION:

Chapter three embodies the techniques, methodologies and strategies used in this research. A detailed account is given on the research design used and why it is used. The target population is identified and explained. This chapter also identifies the instruments to be used in data presentation and the statistical technique for the data analysis. The latest Statistical Package for Social Science (SPSS) version 11.0 is used for the presentation of the graphic data and test of the hypotheses raised. The computer software package is able to reduce a lot of error and a time consuming manual computations.

3.2 RESEARCH DESIGN

Research Design simply entails the plan for a research work. It is an outline or a scheme that serves as a useful guide to the researcher in his efforts to generate data for his study (Asika: 27). A research design is also concerned with the conditions for the collection and analysis of data in a manner that aims to combine relevance to the research purpose. A researcher is like a professional tailor. He needs to adopt a particular design that will give his work the desired shape or form.

However, it is worthy of mention that a combination of two or more research designs can aptly be used in a particular research report. That is to say that, a specific research design is not necessarily mutually exclusive to a particular project. Each design may capture some elements of the

reality and may be silent on other elements of the same reality. Therefore research designs are supposed to be complementary and interwoven with one another.

It is deemed appropriate, for the purpose of this research to use a multi-method approach to research design. This is meant to facilitate the collection of the valuable data that is required to answer the research questions and hypotheses raised. Therefore given the topic "An Appraisal of the Deregulation of Petroleum Products Prices and its Impact on the Nigerian Economy," the following research designs can be mixed to produce a better outcome.

3.2.1 HISTORICAL RESEARCH DESIGN

The time scope for this study covers the period between 1990-2003. However, the year 1986, the period when the structural Adjustment Programme (SAP) was introduced was instrumental. A study of this nature should include an accurate account of past events (i.e withdrawal of subsidy, privatization, etc as enshrined in the tenets of SAP) and how they are related to present events (deregulation of the downstream sector) and to predict the future trend of events.

The sources of data in a historical research could be primary or secondary. Primary data is specifically compiled and use directly for the purpose collected. In the case of research, primary data can be obtained through interviews and questionnaires. Secondary data comprised of information and facts that have already been collected for some other purpose which the researcher intends to re-analyse to come up with more facts and meanings. It includes documentary sources, published

summaries, raw data, accounts of sales of goods and services, companies' financial statements, etc.

In the case of this research, primary data was generated to answer the research questions while secondary data is used to test the hypotheses.

3.2.2 DESCRIPTIVE RESEARCH DESIGN:

According to Saunders (1997:79), a descriptive research design is meant, "to portray an accurate profile of persons, events or situations". Therefore this study is carried out to describe situations, events and institutions. Also known as non-experimental research, descriptive research can take either of the following forms: -

- **Correlational Study:** It seeks to establish whether or not there is a significant relationship between two or more variables. The degree of relationship is expressed as correlation coefficient (r). In the case of this research, an effort is made to show whether an increase in the price of petroleum products can lead to an increase in the capacity utilization of Nigeria's' refineries.
- **Development study:** This involves investigations of patterns and sequences of growth or changes that take place as a function of time. A development study could either be cross-sectional or longitudinal.
 - A cross-sectional study is a situation whereby data are collected at one point in time in most cases from different sub-groups being sampled. It therefore involved the study of a

particular phenomenon at a particular time. This method is not suitable for the purposes of this research.

- A longitudinal study deals with the description of changes (negative or positive) in the same group of variables that are selected over time. This approach is suitable for the purposes of this research. Since the changes in prices of petroleum and changes in capacity utilization of Nigerians' refineries was studied over a fourteen-year period.

3.2.3 EXPLANATORY RESEARCH DESIGN

These are concerned with explaining why questions. Examples of these questions are why did the government opt for deregulation? Explanatory studies also establish causal relationships between variables. This research also found this approach as suitable.

3.3 RESEARCH POPULATION

The research target or population consist of three main petroleum products which are: PMS, AGO and DPK. These are also known as the white products. These products constitute the bulk of refining at Nigerians' refineries or importation from overseas. Similarly these products constitute a larger market share as translated in excessive demand from members of the Nigerian society.

3.4 INSTRUMENTS USED FOR DATA PRESENTATION

Given the nature of the data, that is tables showing price increases of PMS, AGO and DPK over the years, domestic refining and rates of inflation for the period of the study, it becomes very suitable to use graphs as a method for the presentation of the results. Graphic illustration refers to the presentation of quantities in graph form. Effective graphic presentation means more than merely converting a set of numbers into drawing. It means presenting a picture that will give the reader an accurate understanding of a particular set of "figure" information: a picture of the comparisons or relationships that may be searched for but may not be seen. And the picture will thus be understood more quickly, more forcefully, more completely, and more accurately than could be done in any other way (Churchill 1979:699).

Even though, there are other methods for presenting quantitative information, the graphic method is in this context more amenable to the nature of data collected for this research. In a graphic representation the values of x are on the horizontal x -axis of the graph and the frequencies associated with these values on the vertical Y -axis. The following graphic methods of data representation are used for the purpose of this research.

- **BAR CHARTS:** This consists of vertical bars of equal width whose heights represent the frequency of occurrence of categories or values for one variable so that highest and lowest limits are clear. It enables one to visualize the magnitude, of values being presented. In the context of this research simple bar charts are used to depict in separate cases how the prices of PMS, AGO and DPK changed between 1990 and 2003.

- **MULTIPLE BAR CHART:** This enables easy comparison amongst the various components as illustrated in the charts. It compares the frequency of occurrences of categories or values for two or more variables so that totals highest and lowest limits are clear. Some of the multiple bar charts presented in this study depicted the prices of PMS, AGO and DPK from 1990-2003. Multiple bar charts thus deals with data where there are many values and in this case adjacent bars are compared.
- **LINE CHART:** This is a two-dimensional Chart. It compares the trends for two or more variables so that conjunctions are clear. It therefore depicts a dynamic relationship such as time – series fluctuations of one or more series (variables). The X-axis represents time and the Y-axis values of the variable(s). When more than one variable is presented it is recommended that the lines for different items be distinctive in colour or form (dots and dashes in suitable combinations).

3.5 METHODS OF DATA ANALYSIS:

The techniques for data analysis should be grounded on the nature of the problem, the objectives of the study, hypotheses raised and more importantly the nature of quantitative data obtained. The choice of analysis technique also impinges on the research design being used to generate the data. The hypotheses in this research are framed in the null type such that their rejection leads to the acceptance of the desired conclusion. Given the nature of the data at hand and the hypotheses raised, there is the need to assess the relationship between pairs of variables, i.e between

the increase in the prices of petroleum products with the increase in inflation or production of the products.

The following statistical tools are therefore chosen for the purposes of analysis and test of hypotheses.

- Pearson's product moment correlation coefficient (PMCC) and
- Regression analysis

The Pearson product moment of correlation indicates measures of relationship between two or more variables. The degree of correlation between two variables is computed as an index, the correlation index is referred as the coefficient of correlation and denoted by the letter "r". In its simplest form, the coefficient of correlation formula is as indicated below:

$$r = \frac{n \sum xy - \sum x \sum y}{\sqrt{\left(n \sum x^2 - (\sum x)^2 \right) \left(n \sum y^2 - (\sum y)^2 \right)}}$$

Where

X = Scores in variable (X)

Y = Scores in variable (Y)

$\sum x$ = Sum of X

$\sum Y$ = Sum of Y

$(\sum x)^2$ = Sum of X squared

$(\sum Y)^2$ = Sum of Y squared

n = number of pairs of scores

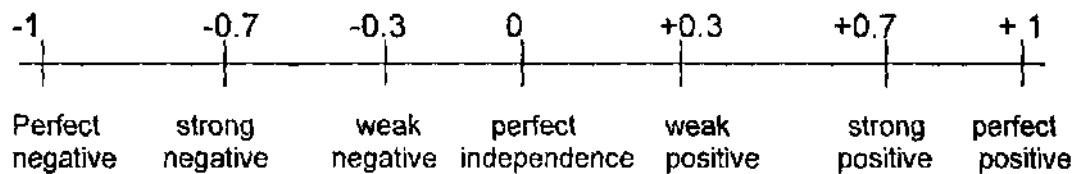
$n \sum X^2$ = Product of N and sum of X squared

$n \sum Y^2$ = Production of N and sum of Y squared

The properties of r :

- i. $-1 \leq r \leq 1$. The values of r range from -1 to 1
- ii. If $r = +1$, there is a perfect linear positive relationship between X and Y , as X increases, Y increases.
- iii. If $r = -1$, there is a perfect linear negative relationship between X and Y , as X increases, Y decreases.
- iv. If $r = 0$, then there is no linear relationship between X and Y . That knowing X tells us nothing about the value of Y .
- v. If r lies between 0 and $+1$, the regression line slopes upward, but the points are scattered about the line. The closer r is to 1 , the closer the points are to the line.

This can also be graphically represented as follows:



The degree of relationship between two sets of measurements is known as correlation coefficients. The correlation coefficient merely gives a measure of lines between two variables X and Y but it does not tell us what the relationship is. The concepts of regression enable the finding of the actual relationship. In regression the focus is on the dependence of Y on X or vice versa. This enables the prediction of one score from the other. Suppose, for instance, that a student is hospitalized just before the final examination. If a lecturer must assign a course grade based on the student's past performance, one strategy is to predict or estimate the score on the final examination from the score of continuous assessment.

As an illustration, consider the following two situations:

- a. X and Y are both random variables
- i. Arm and leg lengths of a random sample of males,
 - ii. Height and vital capacity of random sample of males
 - iii. Age and systolic blood pressure of a random sample of males.

In example "i" one could be interested in predicting Y for a given value of X by investigating the dependence of Y on X, or predicting X for a given value of Y by investigating the dependence of X on Y. In example ii and iii it is likely that the interest will be only in the dependence of Y on X.

- b. The value of Y is observed for fixed values of X. For instance actual domestic production of petroleum products and year X.

In this case one would be interested in predicting Y for a given value of x by investigating the dependence of Y on X.

Thus for any given value of X, the predicted value of Y can be obtained with the following formula.

$$Y = a + bx$$

Some of the common symbols used for the analysis are as follows:

- | | |
|---|---|
| X | Sample mean; ("X bar") |
| U | Population mean ("MU") |
| δ | Population standard deviation ("Sigma") |
| Ø | Population proportion (Theta) |
| Σ | Summation |

CHAPTER FOUR

PRESENTATION AND ANALYSIS OF DATA

4.1 INTRODUCTION

This chapter is aimed at presenting and conducting an objective analysis of the data collected for the purpose of this research. Tables and graphs will be used to present the data while correlation coefficients (r) and regression will be used for the purpose of analysis.

4.2 PRESENTATION OF DATA

The first set of data comprised of tables showing the prices, installed capacities, domestic refining and the local demand for PMS, AGO and DPK from 1990 – 2003.

**TABLE: 4.1 PRICE, DOMESTIC REFINING AND LOCAL DEMAND FOR
PMS, 1990 – 2003**

Year	Price	Installed Capacity @ 50% (Bpd)	Domestic Refining (Bpd)	Local Demand Daily (Bpd)
1990	0.60k	225,500	66,750	250,000
1991	0.70k	225,500	77,875	255,000
1992	0.70k	225,500	76,500	260,000
1993	N 3.25k	225,500	81,000	286,000
1994	N 11.00	225,500	85,015	292,000
1995	N 11.00	225,500	90,200	298,000
1996	N 11.00	225,500	90,450	300,000
1997	N 11.00	225,500	93,376.80	315,000
1998	N 11.00	225,500	89,000	331,000
1999	N 20.00	225,500	90,969	348,000
2000	N 22.00	225,500	48,474	365,000
2001	N 22.00	225,500	110,396	402,000
2002	N 26.00	225,500	134,101	422,000
2003	N 34.00	225,500	140,300	447,000

Source: NNPC Annual Statistical Bulletin, 2001 and Financial Standard, 2003

TABLE 4.2 PRICES, DOMESTIC REFINING AND LOCAL DEMAND FOR AGO, 1990-2003

Year	Price	Installed Capacity @ 50% (Bpd)	Domestic Refining (Bpd)	Local Demand Daily (Bpd)
1990	0.50k	66,750	20,025	37,500
1991	0.55k	66,750	23,363	38,250
1992	0.55k	66,750	22,950	39,015
1993	N 3.00	66,750	24,300	42,916
1994	N 9.00	66,750	25,505	43,775
1995	N 9.00	66,750	27,060	44,651
1996	N 9.00	66,750	27,135	45,544
1997	N 9.00	66,750	27,957	47,821
1998	N 9.00	66,750	26,700	50,212
1999	N 19.00	66,750	27,291	52,723
2000	N 21.00	66,750	14,542	55,359
2001	N 21.00	66,750	33,119	60,895
2002	N 26.00	66,750	40,230	63,940
2003	N 38.00	66,750	36,030	67,776

Source: NNPC Annual Statistical Bulletin, 2001 and Financial Standard, 2003

TABLE 4.3: PRICES, DOMESTIC REFINING AND LOCAL DEMAND FOR DPK, 1990-2003.

Year	Price	Installed Capacity @ 50% (Bpd)	Domestic Refining (Bpd)	Local Demand Daily (Bpd)
1990	0.40k	89,000	26,700	50,000
1991	0.50k	89,000	31,150	51,000
1992	0.50k	89,000	30,600	52,000
1993	N 2.75	89,000	32,400	57,200
1994	N 6.00	89,000	34,006	58,400
1995	N 6.00	89,000	36,080	59,600
1996	N 6.00	89,000	36,180	60,000
1997	N 6.00	89,000	37,275	63,00
1998	N 6.00	89,000	35,600	66,200
1999	N 17.00	89,000	36,388	69,600
2000	N 17.00	89,000	19,390	73,000
2001	N 17.00	89,000	44,158	80,400
2002	N 24.00	89,000	53,640	84,400
2003	N 38.00	89,000	48,040	89,400

Source: NNPC Annual Statistical Bulletin, 2001 and Financial Standard, 2003

Tables 4.1, 4.2 and 4.3 above are used as the basic inputs for all the subsequent presentation and analysis of data.

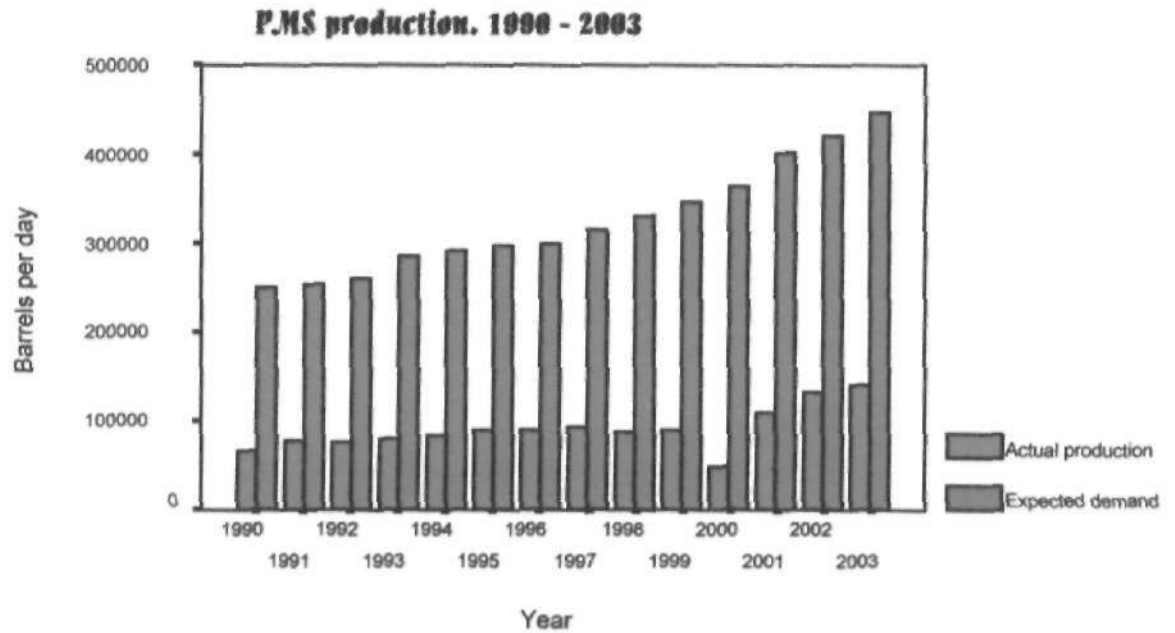
Table 4.4: RATES OF INFLATION, 1990 – 2003

Year	Rate (%)
1990	7.5
1991	13.0
1992	44.5
1993	57.2
1994	57.0
1995	72.8
1996	29.3
1997	8.5
1998	10.8
1999	6.6
2000	6.9
2001	18.9
2002	20.2
2003	23.0

Source: Federal Office of Statistics

Table 4.4 indicates the rates of inflation in Nigeria from 1990 – 2003. This is meant to enable the test of the second hypothesis.

Fig: 4.1



The bar chart in figure 4.1 compares actual production of PMS between 1990 – 2003 with the expected domestic demand. A cursory glance will show that there was a mismatch between actual production and expected demand. Demand always outstripped production. The implication is that, even with the price increases, Nigeria’s domestic refineries could not be put in good shape to cope with the growing expected demand. This therefore leads to all sorts of vices, i.e. smuggling, black marketing, e.t.c.

Fig: 4.2

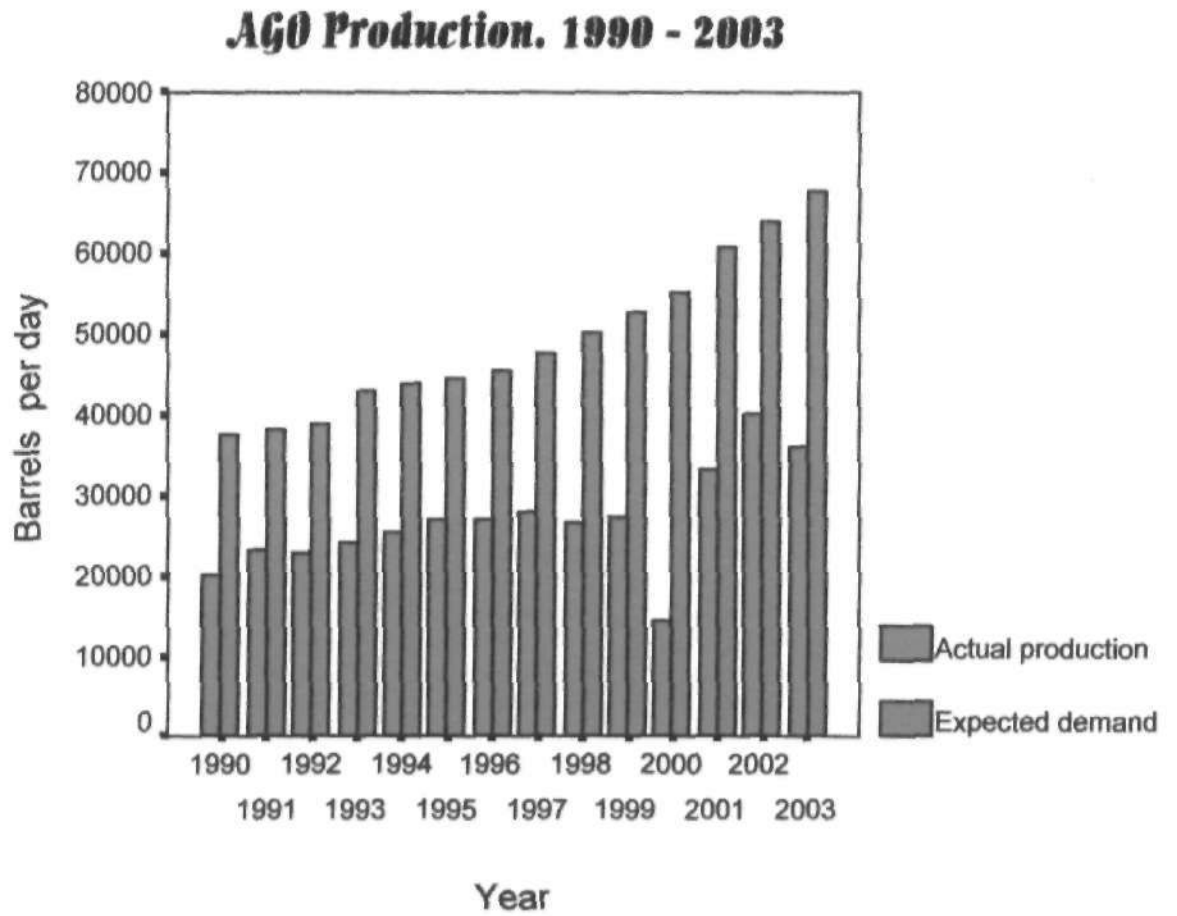
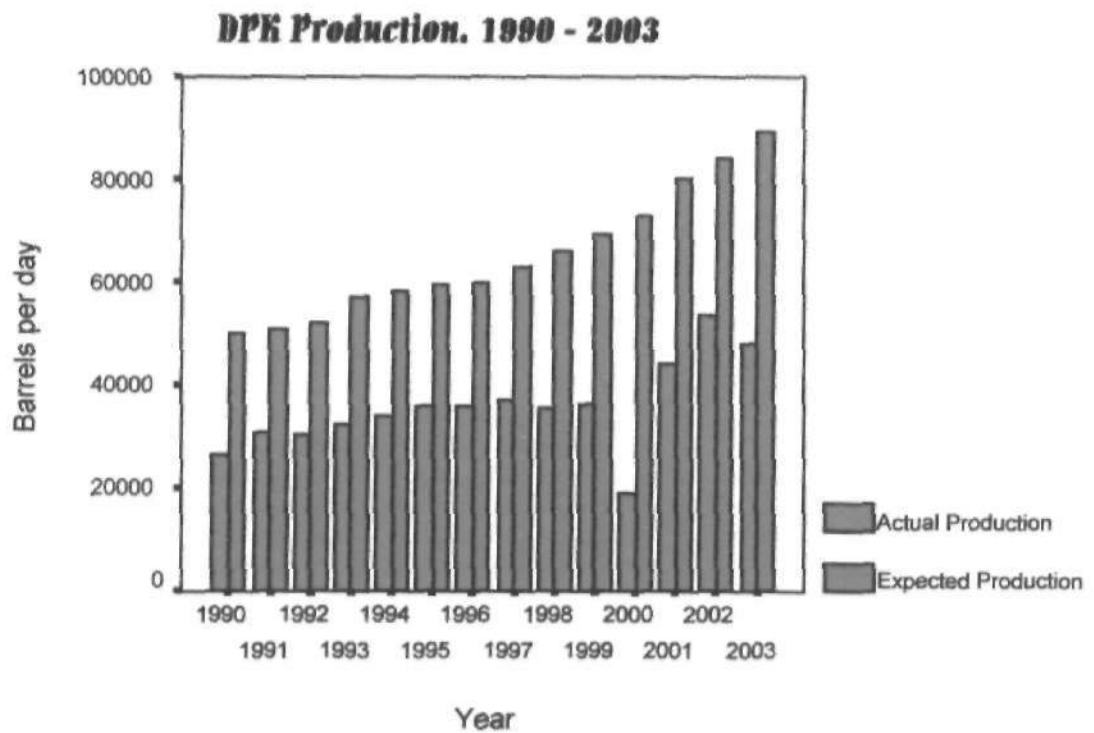


Fig 4.3



The bar charts in figures 4.2 and 4.3 equally compare actual production of AGO and DPK with the expected demand. Just like in PMS as explained in figure 4.1, one can gather that Nigeria's refineries have throughout the period of this study always produce short of the expected demand

Figures 4.4, 4.5 and 4.6 are simple bar charts, which further complement the multiple bar charts in figures 4.1, 4.2 and 4.3. The bar charts magnify the actual domestic production of PMS, AGO and DPK from 1990 – 2003. It is pertinent to add that this fell short of domestic demand as highlighted in the next Set of figures. The two sets of graphs on production (figures 4.4, 4.5, and 4.6) and demand (Figures 4.7, 4.8 and 4.9) may look alike, however on closer observation, it can be gathered that the values on the vertical Y – axis of figures 4.4, 4.5 and 4.6 are greatly different from the values on the vertical Y – axis of graphs 4.7, 4.8 and 4.9.

Fig: 4.7

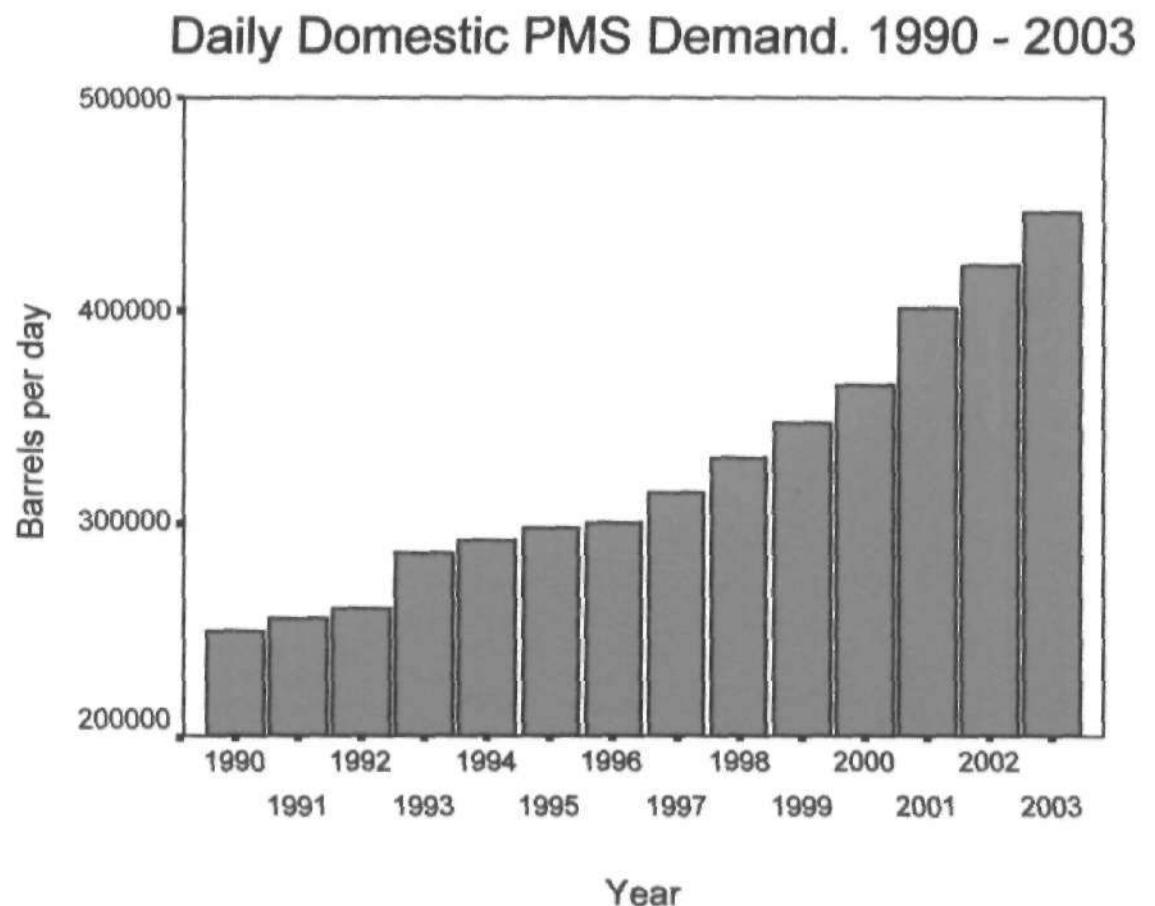


Fig 4.8

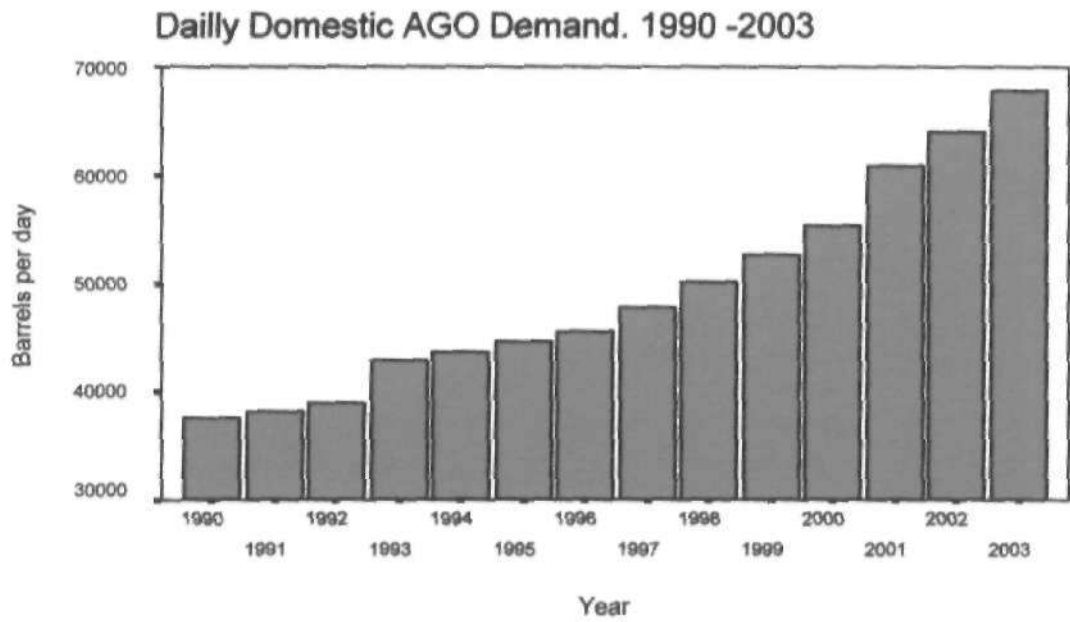
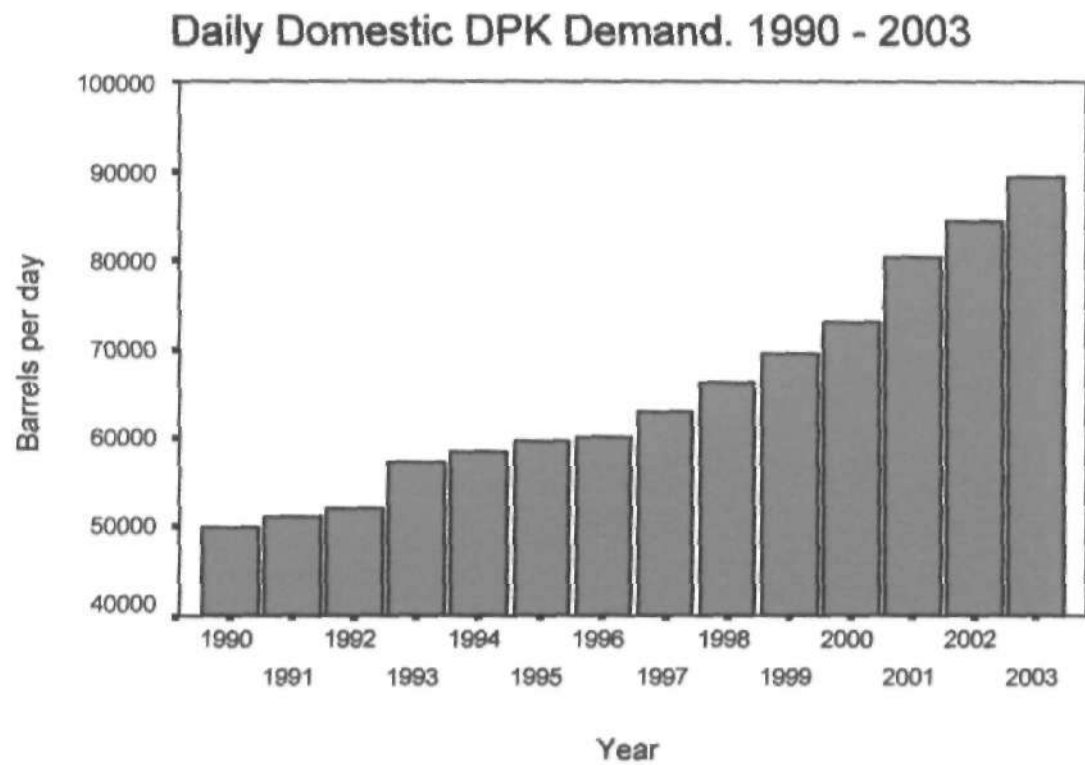


Fig 4.9



Figures 4.7, 4.8 and 4.9 shows the daily domestic demand for PMS, AGO and DPK from 1990 – 2003.

Fig: 4.10

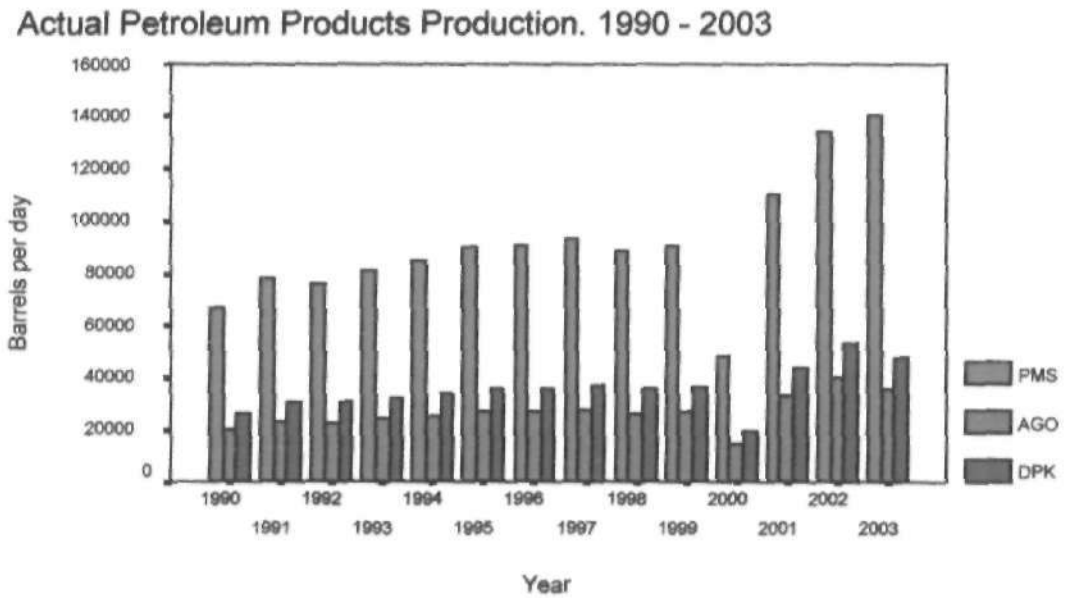


Fig: 4.11

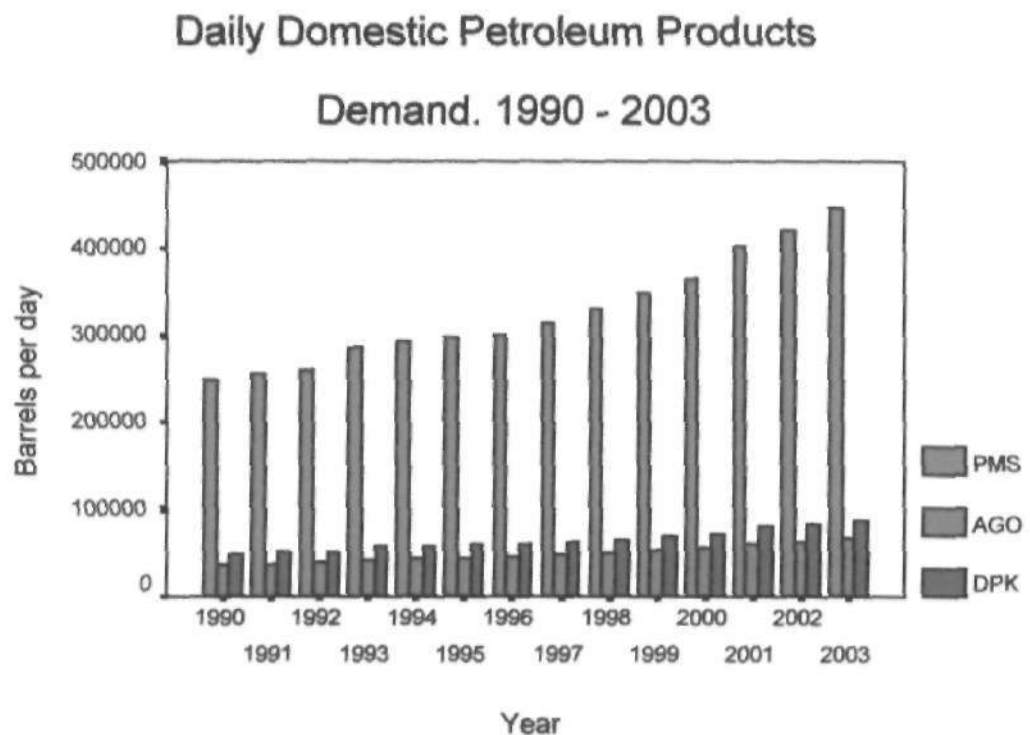
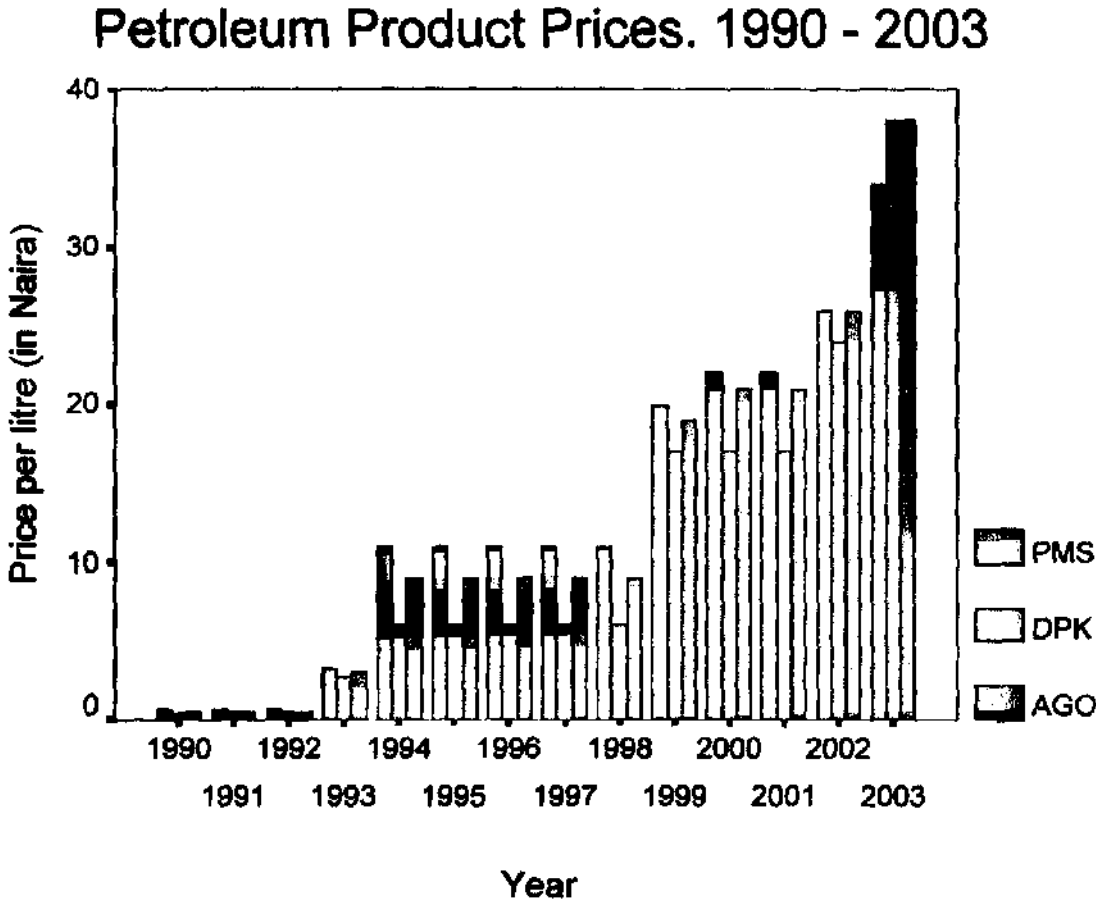


Figure 4.10 is a multiple bar chart showing the actual production for the different components of petroleum products while figure 4.11 is another multiple bar chart showing the daily demand for different components of petroleum products between 1990 – 2003. The vertical Y – axis on figure 4.10 is peaked at 160, 000 while the vertical Y – axis on figure 4.11 is peaked at 500, 000. This clearly shows that the daily demand for petroleum products transcends the actual production. This implies that, Nigeria's four refineries cannot produce to meet up with the growing demands in spite of the fact that price increases over the same period were, according to the government, meant to make the refineries produce at maximum capacity.

Fig: 4.12



The multiple bar chart in figure 4.12 illustrates the rising trend in the prices of PMS, DPK and AGO from 1990 – 2003. From 1994 – 1998 the prices were pegged. However from 1999 onward there has been price increases of the three products and in all cases it were through administrative fiat or not through the interplay between forces of demand and supply. As at 1998 the prices for PMS, DPK and AGO were ₦11.00, ₦6.00 and ₦9.00 respectively, by 2002 these prices leapt to ₦26.00 ₦24.00 and ₦26.00 respectively. This represents a percentage increase of 136 for PMS, 300 for DPK and in 189 for AGO. It can also be gathered from the multiple bar chart that in 2003 the prices of AGO and DPK surpass that of PMS. This may not be unconnected with the fact that much attention and energy is focused on the production of PMS to the neglect of other petroleum products. Figure 4.12 also clearly showed that the prices never come down whenever an increase is made.

Fig: 4.13

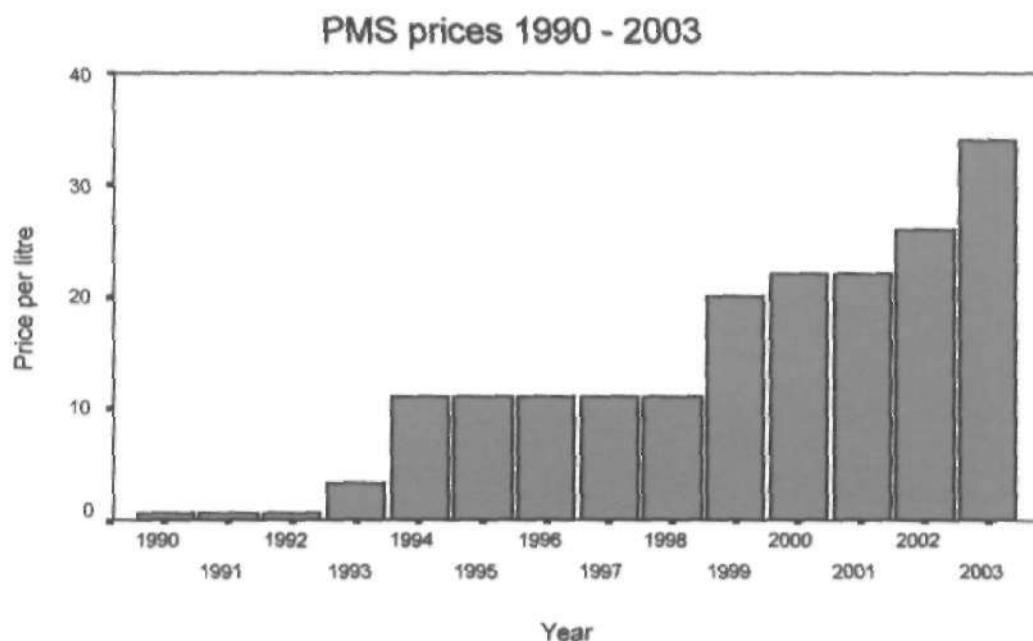


Fig 4.14

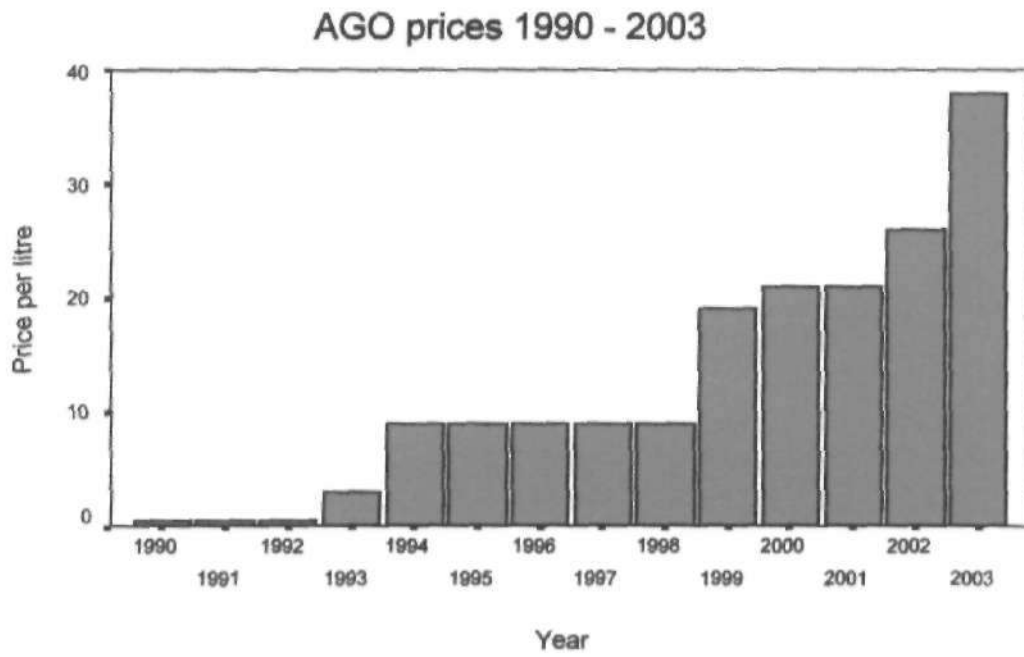
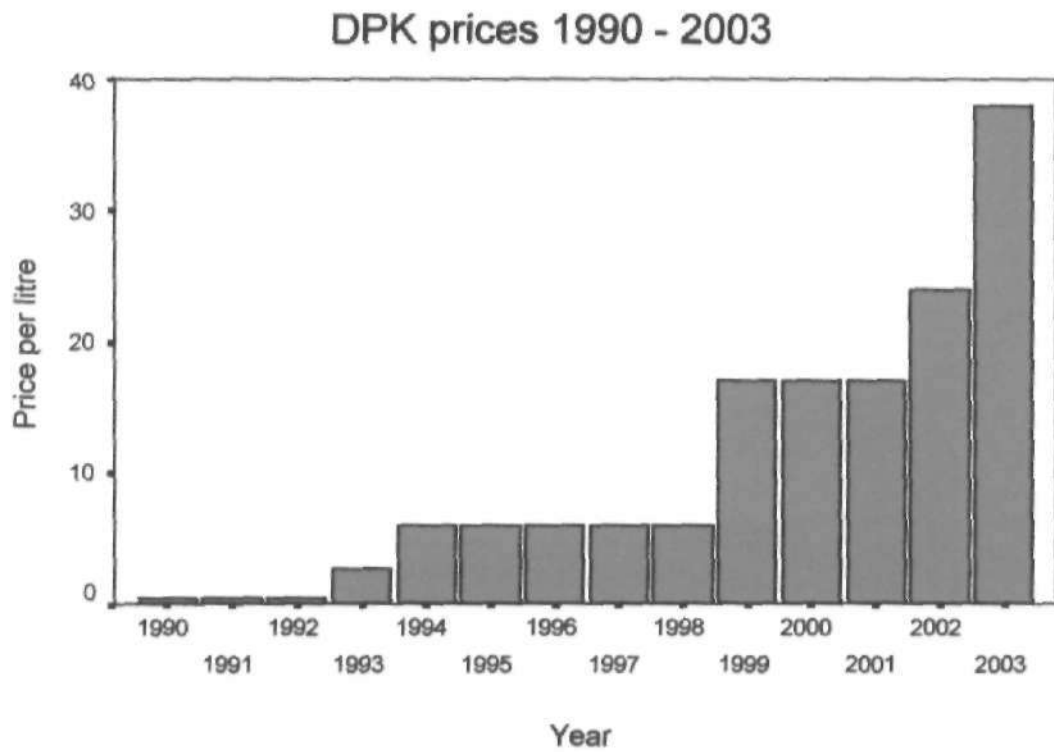


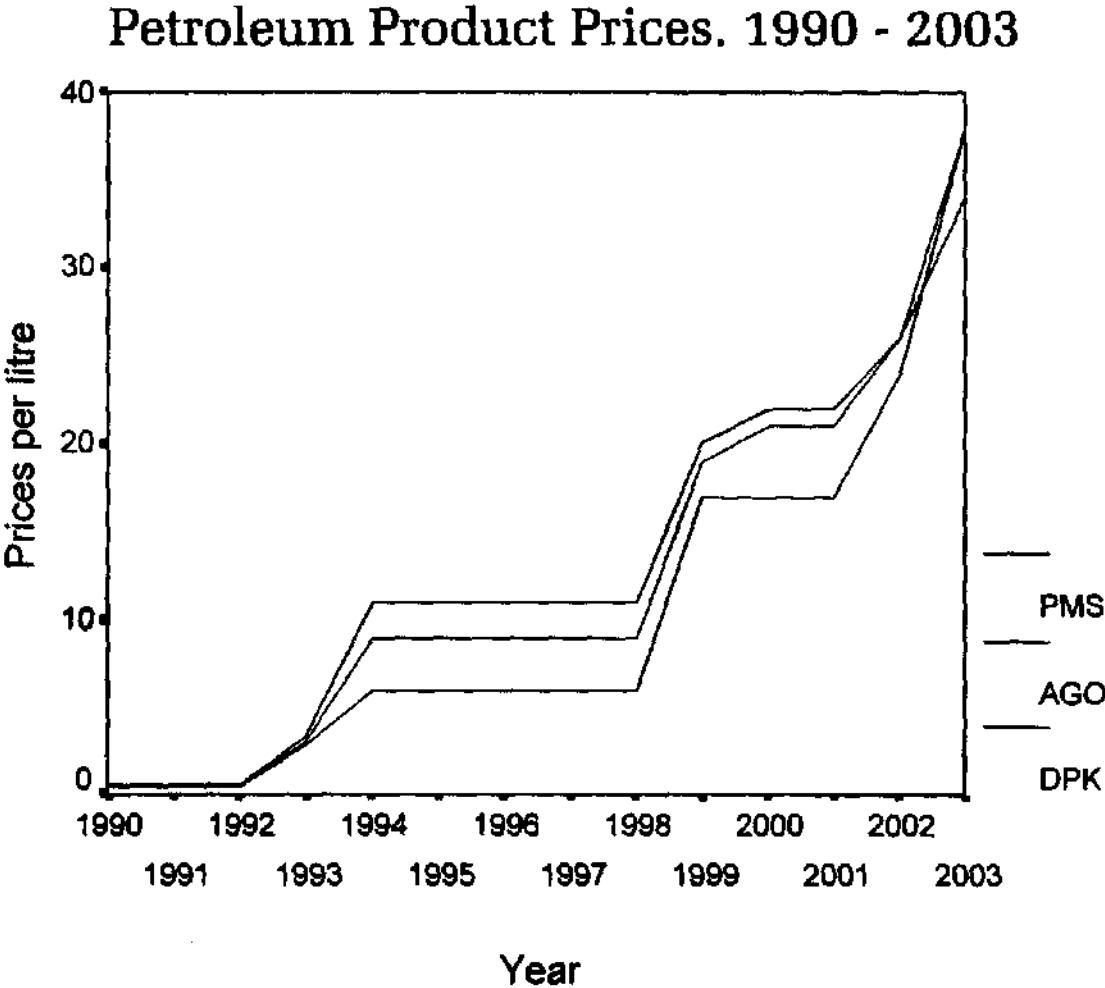
Fig: 4.15



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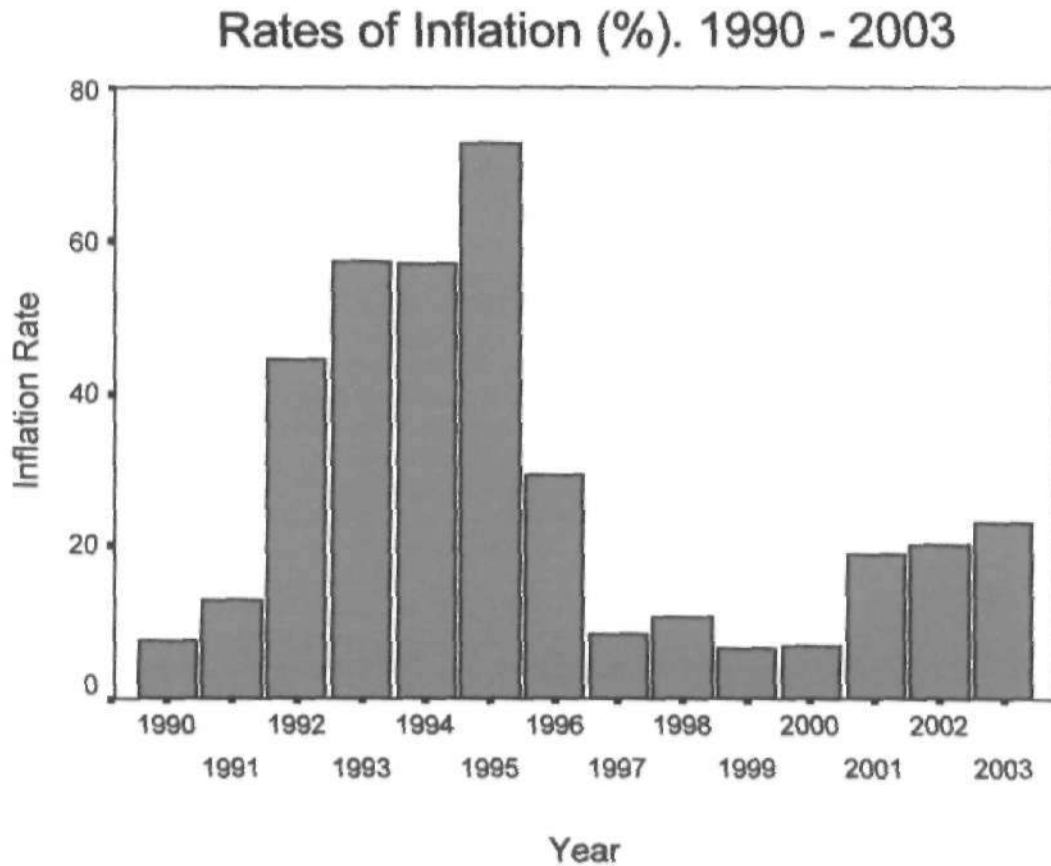
Figures 4.13, 4.14 and 4.15 are simple bar charts showing in separate cases the increase in the prices of petroleum products for PMS, AGO and DPK from 1990 – 2003. Between 1994 – 1998 the prices remained stable and were pegged at ₦ 11. 00, ₦ 9. 00 and ₦ 6. 00 for PMS, AGO and DPK respectively.

Fig: 4.16



The line chart in figure 4.16 represented figure 4.12. This is further meant to clearly indicate the rising trend of the prices of petroleum products, namely PMS, AGO and DPK from 1990-2003.

Fig: 4.17



The simple bar chart in figure 4.17 illustrates the rate of inflation between 1990 – 2003. It can be deduced that from the year 1999 the rates of inflation were steadfastly rising. The period corresponds with unprecedented increases in the prices of petroleum products. During the period most of the rates showed double-digit inflation instead of the one digit inflation, which conform more with macro economic stability.

Fig: 4.18

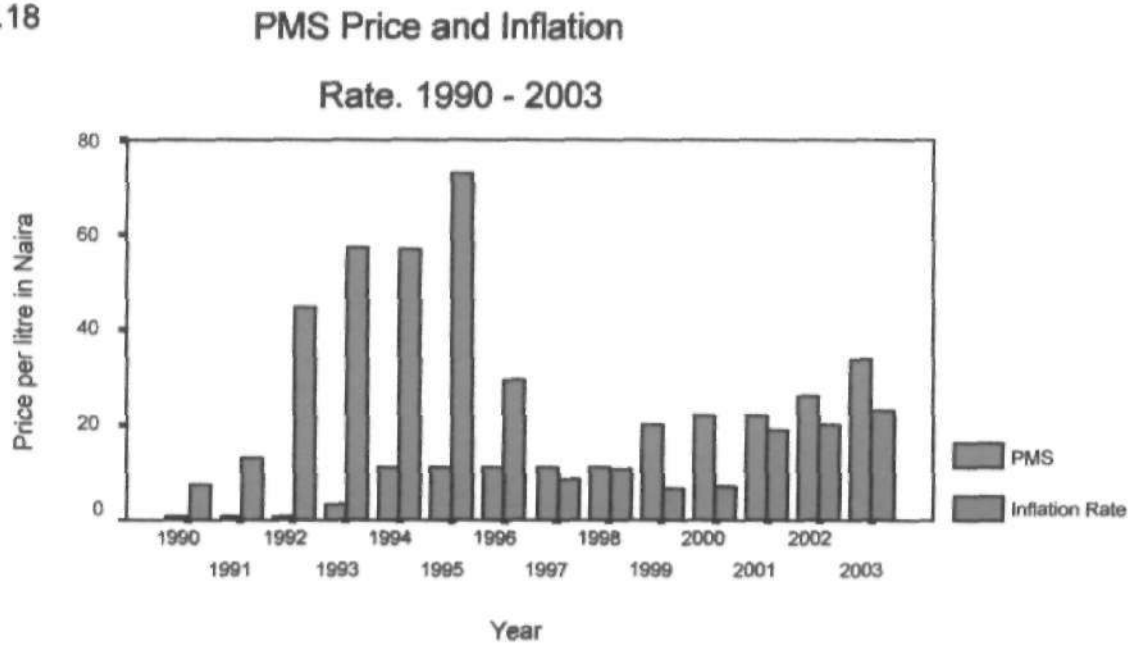


Fig 4.19

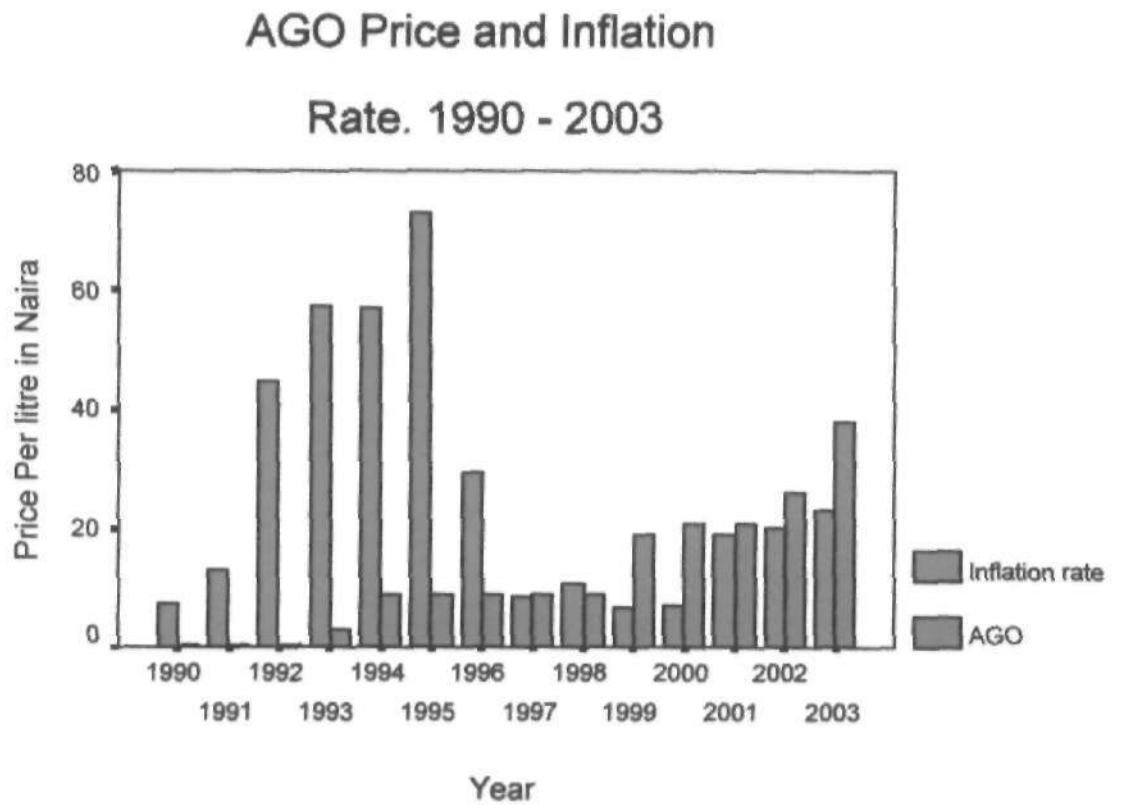
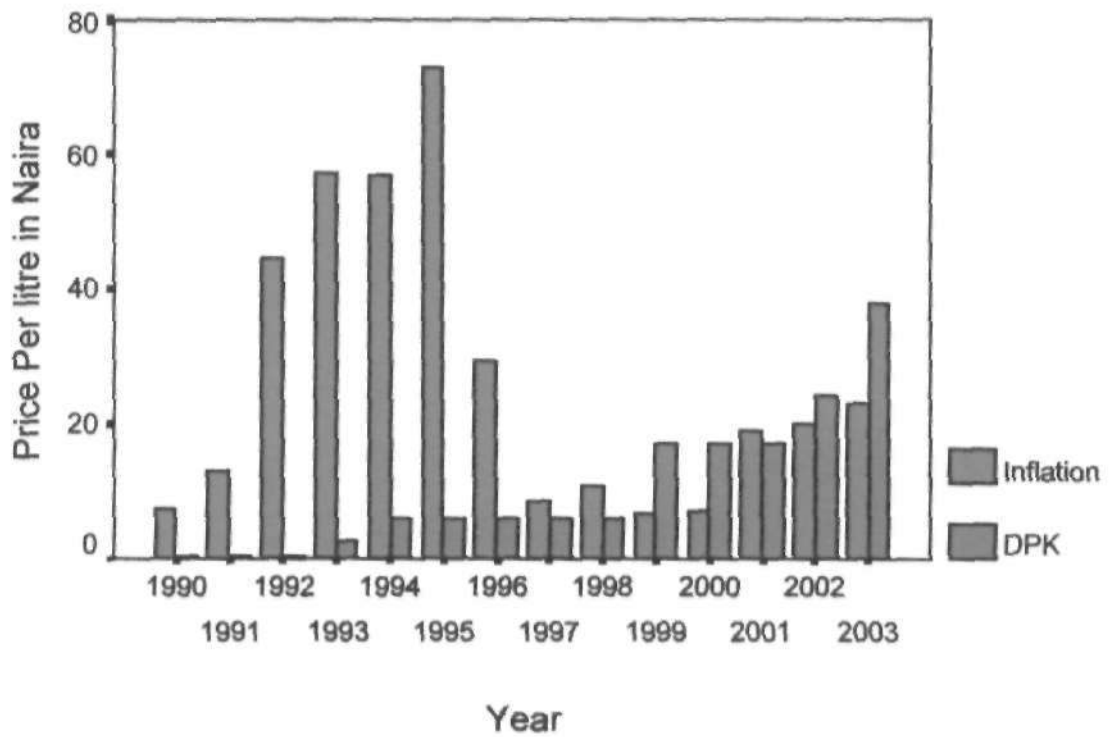


Fig: 4.20

DPK Price and Inflation Rate. 1990 - 2003



The multiple bar charts in figures 4.18, 4.19 and 4.20 indicate how inflation changes with changes in the prices of petroleum products, PMS, AGO and DPK from 1990 – 2003.

4.3 DATA ANALYSIS

In this section the statistical tools described in chapter three will be used to draw relevant conclusion with a view to accept or reject the hypotheses raised. To achieve greater accuracy, the SPSS package version 11.0 will be used for the analysis. The variables entered for analysis are: year, PMS price, PMS Actual production (PMSACTPR), PMS Expected daily local demand (PMSEXPDD), AGO price, AGO Actual production (AGOACTPR), AGO expected Daily local Demand (AGOEXPDD), DPK price, DPK Actual production (DPKACTPR), DPK Expected Daily local demand (DPKEXPDD), and Inflation rates (Inflation). Correlation and regression analysis will be used for the purpose of data analysis.

4.3.1 TEST OF FIRST HYPOTHESIS

The result of the correlation analysis amongst all the variables is as shown in table 4.5 below

Table 4.5

Pearson Correlations Analysis, 1990 – 2003

Correlations

		YEAR	PMSPRICE	PMSACTPR	PMSEXPDD	AGOPRICE	AGOACTPR	AGOEXPDD	DPKPRICE	DPKACTPR	DPKEXPDD	INFLATIO
YEAR	Pearson Correlation	1	.960**	.640*	.971**	.934**	.608*	.973**	.891**	.608*	.971**	-.316
	Sig. (2-tailed)	.	.000	.014	.000	.000	.021	.000	.000	.021	.000	.270
	N	14	14	14	14	14	14	14	14	14	14	14
PMSPRICE	Pearson Correlation	.960**	1	.658*	.969**	.992**	.596*	.969**	.965**	.596*	.969**	-.253
	Sig. (2-tailed)	.000	.	.011	.000	.000	.025	.000	.000	.025	.000	.383
	N	14	14	14	14	14	14	14	14	14	14	14
PMSACTPR	Pearson Correlation	.640*	.658*	1	.723**	.684**	.979**	.720**	.710**	.979**	.723**	.012
	Sig. (2-tailed)	.014	.011	.	.003	.007	.000	.004	.004	.000	.003	.969
	N	14	14	14	14	14	14	14	14	14	14	14
PMSEXPDD	Pearson Correlation	.971**	.969**	.723**	1	.968**	.676**	1.000**	.948**	.676**	1.000**	-.284
	Sig. (2-tailed)	.000	.000	.003	.	.000	.008	.000	.000	.008	.	.326
	N	14	14	14	14	14	14	14	14	14	14	14
AGOPRICE	Pearson Correlation	.934**	.992**	.684**	.968**	1	.604*	.967**	.990**	.604*	.968**	-.255
	Sig. (2-tailed)	.000	.000	.007	.000	.	.022	.000	.000	.022	.000	.379
	N	14	14	14	14	14	14	14	14	14	14	14
AGOACTPR	Pearson Correlation	.608*	.596*	.979**	.676**	.604*	1	.673**	.616*	1.000**	.676**	.026
	Sig. (2-tailed)	.021	.025	.000	.008	.022	.	.008	.019	.000	.008	.929
	N	14	14	14	14	14	14	14	14	14	14	14
AGOEXPDD	Pearson Correlation	.973**	.969**	.720**	1.000**	.967**	.673**	1	.946**	.673**	1.000**	-.296
	Sig. (2-tailed)	.000	.000	.004	.000	.000	.008	.	.000	.008	.000	.305
	N	14	14	14	14	14	14	14	14	14	14	14
DPKPRICE	Pearson Correlation	.891**	.965**	.710**	.948**	.990**	.616*	.946**	1	.616*	.948**	-.252
	Sig. (2-tailed)	.000	.000	.004	.000	.000	.019	.000	.	.019	.000	.385
	N	14	14	14	14	14	14	14	14	14	14	14
DPKACTPR	Pearson Correlation	.608*	.596*	.979**	.676**	.604*	1.000**	.673**	.616*	1	.676**	.026
	Sig. (2-tailed)	.021	.025	.000	.008	.022	.000	.008	.019	.	.008	.929
	N	14	14	14	14	14	14	14	14	14	14	14
DPKEXPDD	Pearson Correlation	.971**	.969**	.723**	1.000**	.968**	.676**	1.000**	.948**	.676**	1	-.284
	Sig. (2-tailed)	.000	.000	.003	.	.000	.008	.000	.000	.008	.	.326
	N	14	14	14	14	14	14	14	14	14	14	14
INFLATIO	Pearson Correlation	-.316	-.253	.012	-.284	-.255	.026	-.296	-.252	.026	-.284	1
	Sig. (2-tailed)	.270	.383	.969	.326	.379	.929	.305	.385	.929	.326	.
	N	14	14	14	14	14	14	14	14	14	14	14

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Looking at the price increases of petroleum product from 1990-2003 with capacity utilization of Nigeria's refineries over the same period, we noticed that there is a not too good strong relationship between increases in prices of PMS, AGO and DPK compared with an increase in the actual production of three products. This is deduced from the Pearson correlation coefficient of 0.658, 0.604 and 0.616 for PMS price and PMS actual production; AGO price and AGO actual Production and DPK price and its actual production respectively.

Based on the result for the correlation analysis, we accept the null hypothesis, which states that: There is no significant relationship between an increase in the prices of petroleum products with an increase in the capacity utilization of Nigeria's refineries.

It can also be observed from the correlation analysis table that there is a strong positive relationship between PMS price, AGO price and DPK price over the years 1990-2003. This is illustrated by the Pearson correlation co-efficient of 0.992 and 0.965 obtained for AGO price and DPK price respectively. Although this does not impact on the hypothesis, it all the same shows that any price increases usually affect all the three products on varying proportions.

4.3.2 TEST OF SECOND HYPOTHESIS

The second hypothesis is trying to establish whether or not an increase in the prices of petroleum products leads to an increase in the cost of living for the mass of Nigerians. The prices of PMS AGO and DPK were thus compared with the rates of inflation for the years of

study i.e. 1990 - 2003. From the table we can gather that there is a very weak perfect negative correlation between increases of PMS, AGO and DPK from 1990-2003 compared with increase in the cost of living as shown under inflationary rates over the same period. This can be deduced from the Pearson correlation coefficient of -0.253 , -0.255 and -0.252 for PMS price and inflation; AGO price and inflation and DPK price and inflation respectively.

Therefore based on the results for the correlation analysis we can accept the second hypothesis.

However, considering the facts highlighted in the Literature Review it can be posited without mincing of words that an increase in the price of petroleum product always has a multiplier effect on the economy. Thus, it leads to unprecedented increases in the cost of goods and services. Given this assumption, a closer scrutiny was given to figures 4.18, 4.19 and 4.20. It is observed that the inflation rates were also rising from 1999-2003. The results are shown on table 4.6

Table 4.6

Pearson Correlations Analysis, 1999 – 2003

Correlations

		YEAR	PMSPRICE	PMSACTPR	PMSEXPDD	AGOPRICE	AGOACTPR	AGOEXPDD	DPKPRICE	DPKACTPR	DPKEXPDD	INFLATIO
YEAR	Pearson Correlation	1	.906*	.785	.994**	.881*	.685	.995**	.849	.685	.994**	.936*
	Sig. (2-tailed)	.	.034	.116	.000	.048	.202	.000	.069	.202	.000	.019
	N	5	5	5	5	5	5	5	5	5	5	5
PMSPRICE	Pearson Correlation	.906*	1	.687	.884*	.998**	.518	.886*	.989**	.518	.884*	.759
	Sig. (2-tailed)	.034	.	.200	.047	.000	.371	.045	.001	.371	.047	.137
	N	5	5	5	5	5	5	5	5	5	5	5
PMSACTPR	Pearson Correlation	.785	.687	1	.833	.678	.973**	.831	.700	.973**	.833	.892*
	Sig. (2-tailed)	.116	.200	.	.080	.208	.005	.081	.188	.005	.080	.042
	N	5	5	5	5	5	5	5	5	5	5	5
PMSEXPDD	Pearson Correlation	.994**	.884*	.833	1	.861	.743	1.000**	.831	.743	1.000**	.967**
	Sig. (2-tailed)	.000	.047	.080	.	.061	.150	.000	.081	.150	.000	.007
	N	5	5	5	5	5	5	5	5	5	5	5
AGOPRICE	Pearson Correlation	.881*	.998**	.678	.861	1	.502	.863	.994**	.502	.861	.734
	Sig. (2-tailed)	.048	.000	.208	.061	.	.389	.060	.001	.389	.061	.158
	N	5	5	5	5	5	5	5	5	5	5	5
AGOACTPR	Pearson Correlation	.685	.518	.973**	.743	.502	1	.740	.527	1.000**	.743	.843
	Sig. (2-tailed)	.202	.371	.005	.150	.389	.	.153	.362	.000	.150	.073
	N	5	5	5	5	5	5	5	5	5	5	5
AGOEXPDD	Pearson Correlation	.995**	.886*	.831	1.000**	.863	.740	1	.833	.740	1.000**	.966**
	Sig. (2-tailed)	.000	.045	.081	.000	.060	.153	.	.080	.153	.000	.008
	N	5	5	5	5	5	5	5	5	5	5	5
DPKPRICE	Pearson Correlation	.849	.989**	.700	.831	.994**	.527	.833	1	.527	.831	.707
	Sig. (2-tailed)	.069	.001	.188	.081	.001	.362	.080	.	.362	.081	.181
	N	5	5	5	5	5	5	5	5	5	5	5
DPKACTPR	Pearson Correlation	.685	.518	.973**	.743	.502	1.000**	.740	.527	1	.743	.843
	Sig. (2-tailed)	.202	.371	.005	.150	.389	.000	.153	.362	.	.150	.073
	N	5	5	5	5	5	5	5	5	5	5	5
DPKEXPDD	Pearson Correlation	.994**	.884*	.833	1.000**	.861	.743	1.000**	.831	.743	1	.967**
	Sig. (2-tailed)	.000	.047	.080	.	.061	.150	.000	.081	.150	.	.007
	N	5	5	5	5	5	5	5	5	5	5	5
INFLATIO	Pearson Correlation	.936*	.759	.892*	.967**	.734	.843	.966**	.707	.843	.967**	1
	Sig. (2-tailed)	.019	.137	.042	.007	.158	.073	.008	.181	.073	.007	.
	N	5	5	5	5	5	5	5	5	5	5	5

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

From table 4.6 we can deduce that there is a strong positive correlation between the increases in the prices of PMS, AGO and DPK from 1990-2003 compared with increase in the cost of living. This is revealed by the correlation coefficients of 0.759, 0.734 and 0.707 for PMS price and inflation; AGO price and inflation and DPK price and inflation respectively.

Therefore based on the new outcome from the results of the Pearson correlation we can reject our second hypothesis, which states: There is no significant relationship between an increase on the prices of petroleum products with an increase in the cost of living in Nigeria. The results from the correlation table in the last five years showed that an increase in the prices petroleum products leads to an increase in the cost of living or inflation.

4.3.3. REGRESSION ANALYSIS

The aim of this section is to predict the future prices of PMS, AGO and DPK from 2004 – 20066. Therefore the price will be regressed against the year. Manual computation is used where.

$$Y = a + bx$$

Y – dependent variables (i.e. prices)

X – independent variables (i.e. years)

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

$$a = \bar{y} - b\bar{x}$$

$$= \frac{\sum y}{n} - \frac{b\sum x}{n}$$

Table 4.7 REGRESSION FOR PMS

X	Y	X ²	Xy
-7	0.60	49	-4.2
-6	0.70	36	-4.2
-5	0.70	25	-3.5
-4	4.25	16	-13
-3	11.00	9	-33
-2	11.00	4	-22
-1	11.00	1	-11
1	11.00	1	11
2	11.00	4	22
3	20.00	9	60
4	22.00	16	88
5	22.00	25	110
6	26.00	36	154
7	34.00	49	238
0	184.25	280	594.1

From table 4.7, instead of using 1 – 14 or 1990 – 2003, the independent variables were coded to allow greater room for analysis.

Since $\sum x = 0$

$$B = \frac{\sum xy}{\sum x^2}$$

$$a = \frac{\sum y}{n}$$

$$\therefore \hat{b} = \frac{594.1}{280}$$

$$= 2.12$$
$$\hat{a} = \frac{\sum y}{n} = \frac{184.25}{14}$$

$$= 13.16$$

∴ in 1990 when $x = -7$

$$y = 13.16 + 2.12 (-7)$$

$$= 13.16 - 14.84 = -1.68$$

$$1991 = 13.16 + 2.12 (-6)$$

$$= 13.16 - 12.75 = 0.44$$

$$1992 = 13.16 + 2.12(-5)$$

$$= 13.16 - 10.6 = 2.56$$

$$1993 = 13.16 + 2.12 (-4)$$

$$= 13.16 - 12.75 = 4.68$$

$$1994 = 13.16 + 2.12 (-3)$$

$$= 13.16 - 12.75 = 6.8$$

$$1995 = 13.16 + 2.12 (-2)$$

$$= 13.16 - 12.75 = 8.92$$

$$1996 = 13.16 + 2.12 (-1)$$

$$= 13.16 - 12.75 = 11.04$$

$$1997 = 13.16 + 2.12 (1)$$

$$= 13.16 - 12.75 = 15.28$$

$$1998 = 13.16 + 2.12 (2)$$

$$= 13.16 - 12.75 = 17.40$$

$$1999 = 13.16 + 2.12 (3)$$

$$= 13.16 - 12.75 = 19.52$$

$$2000 = 13.16 + 2.12 (4)$$

$$= 13.16 - 12.75 = 21.64$$

$$2001 = 13.16 + 2.12 (5)$$

$$= 13.16 - 12.75 = 23.73$$

$$2002 = 13.16 + 2.12 (6)$$

$$= 13.16 - 12.75 = 25.88$$

$$2003 = 13.16 + 2.12 (7)$$

$$= 13.16 - 12.75 = 28.$$

The analysis is represented in table 4.8. The predicted equation follows in

table 4.9

$$\hat{y} = \hat{a} + \hat{bx} = 13.16 + 2.12X$$

TABLE 4.8 TREND VALUES FOR PMS

Years	$Y = 13.16 + 2.12X$
1990	-1.68
1991	0.44
1992	2.56
1993	4.68
1994	6.8
1995	8.92
1996	11.04
1997	15.28
1998	17.40
1999	19.52
2000	21.64
2001	23.76
2002	25.88
2003	28.00

Table 4.9 predicted years for PMS

Year	$\hat{Y} = 13.16 + 2.12X$
X = 8, 2004	30.12
X = 9, 2005	32.24
X = 10, 2006	34.36

$$2004 = 13.16 + 2.12(8)$$

$$= 13.16 + 16.96 = 30.12$$

$$2005 = 13.16 + 2.12(9)$$

$$= 13.16 + 19.08 = 32.24$$

$$2006 = 13.16 + 2.12(10)$$

$$= 13.16 + 21.20 = 34.36$$

Therefore when $x= 8$ in 2004 the predicted value is 30.12; when $X = 9$ in 2005 the trend value is 32.24 and when $X = 10$ in 2006 the trend value will be 34.36. These values do not necessarily represent the price rather the indicated a rising trend of -1.68 in 1990 to 34.36 in the year 2006.

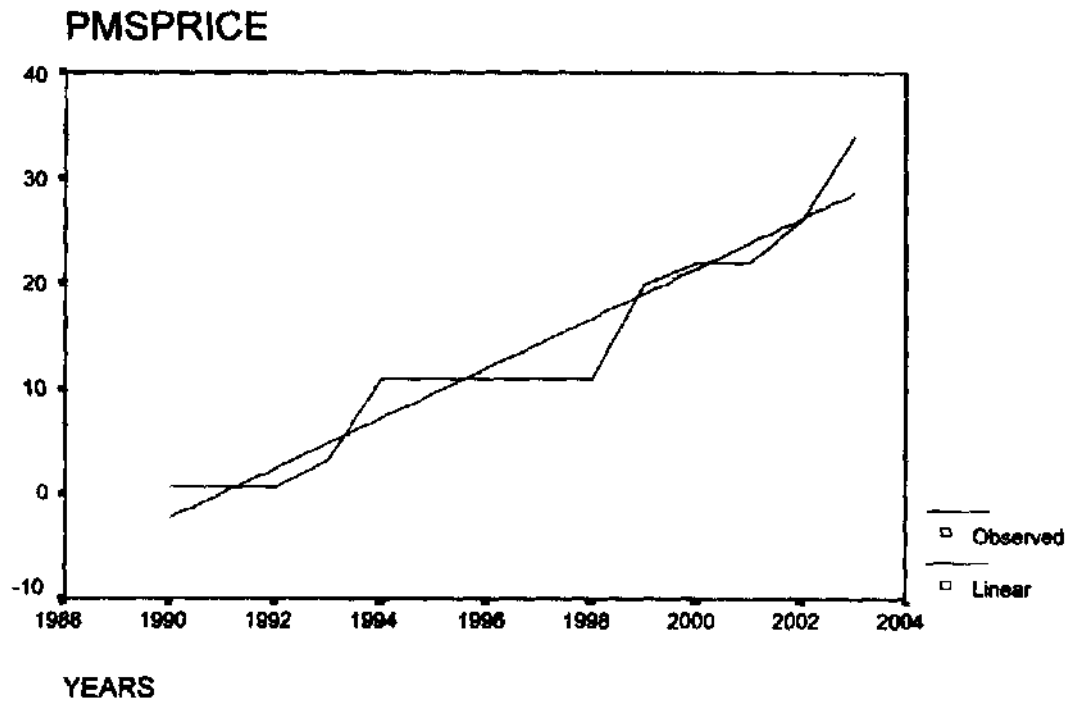
Further this regression analysis can be well presented in a graphical form as in figure 4.21.

Figure 4.21.

Independent: YEARS

Dependent Mth Rsq d.f. F Sigf b0 b1

PMSPRICE LIN .922 12 140.95 .000 -4727.8 2.3746



From figure 4.21 we can observe that there is a linear relationship between the independent variables (years) and the dependent variables (prices). The R - Square is 0.922 or 92.2 percent. This means that the line of fitness for the regression is 92.2 percent accurate.

Table 4.10 REGRESSION FOR AGO

X	Y	X ²	XY
-7	0.50	49	-3.5
-6	0.55	36	-3.3
-5	0.55	25	-2.75
-4	3.00	16	-12
-3	9.00	9	-27
-2	9.00	4	-18
-1	9.00	1	-9
1	9.00	1	9
2	9.00	4	18
3	19.00	9	57
4	221.00	16	84
5	21.00	25	105
6	26.00	36	156
7	38.00	49	266
0	174.6	280	619.45

$$\begin{aligned}\hat{b} &= \frac{619.455}{280} \\ &= 2.21\end{aligned}$$

$$\begin{aligned}\hat{a} &= \frac{\sum Y}{n} = \frac{174.6}{14} \\ &= 12.47.\end{aligned}$$

From table 4.10 when X = -7

$$y = 12.47 + 2.21X$$

$$\begin{aligned}1990 &= 12.47 + 2.21(-7) \\ &= 12.47 - 15.47 = -3 \\1991 &= 12.47 + 2.21(-6) \\ &= 12.47 - 13.26 = -0.79 \\1992 &= 12.47 + 2.21(-5) \\ &= 12.47 - 11.05 = 1.42 \\1993 &= 12.47 + 2.21(-4) \\ &= 12.47 - 8.84 = 3.63 \\1994 &= 12.47 + 2.21(-3) \\ &= 12.47 - 6.63 = 5.84 \\1995 &= 12.47 + 2.21(-2) \\ &= 12.47 - 4.42 = 8.05 \\1996 &= 12.47 + 2.21(-1) \\ &= 12.47 - 2.21 = 10.26 \\1997 &= 12.47 + 2.21(1) \\ &= 12.47 - 2.21 = 14.68 \\1998 &= 12.47 + 2.21(2) \\ &= 12.47 - 4.42 = 16.89 \\1999 &= 12.47 + 2.21(3) \\ &= 12.47 - 6.63 = 19.1 \\2000 &= 12.47 + 2.21(4) \\ &= 12.47 - 8.84 = 21.31 \\2001 &= 12.47 + 2.21(5) \\ &= 12.47 - 11.05 = 23.52 \\2002 &= 12.47 + 2.21(6) \\ &= 12.47 - 13.26 = 25.73\end{aligned}$$

$$2003 = 12.47 + 2.21(7)$$

$$= 12.47 - 13.26 = 27.94$$

The trend values for 1990 – 2003 are represented in table 4.11 while the trend values for the predicted future years, i.e. 2004 – 2006 are shown on table 4.12

Table 4.11 TREND VALUES FOR AGO, 1990 – 2003

YEARS	$Y = 13.16 + 2.12X$
1990	-3
1991	-0.79
1992	1.42
1993	3.63
1994	5.84
1995	8.05
1996	10.26
1997	14.68
1998	16.89
1999	19.1
2000	21.31
2001	23.52
2002	25.73
2003	27.94

**Table: 4.12 THE PREDICTED FUTURE TREND VALUES FOR AGO
2004 – 2006.**

YEAR	$\hat{Y} = 12.47 + 2.21X$
X = 8, 2004	30.15
X = 9, 2005	32.36
X = 10, 2006	34.57

$$2004 = 12.47 + 2.21(8)$$

$$= 12.47 + 17.68 = 30.15$$

$$2005 = 12.47 + 2.21(9)$$

$$= 12.47 + 19.889 = 32.36$$

$$2006 = 12.47 + 2.21(10)$$

$$12.47 + 22.1 = 34.57$$

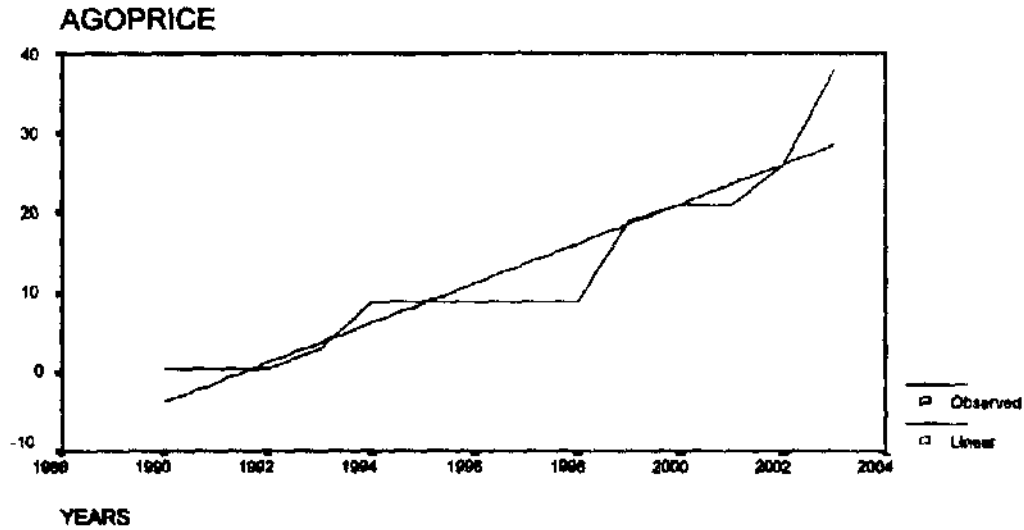
When X = 8 in 2004, the predicted trend value for AGO is 30.15; when X = 9 in 2005 the trend value rises to 32.36 and in 2006 when X = 10, Y = 34.57. It can be discerned that to all intents and purposes the prices of AGO will during this period continue to rise.

By way of further analysis the regression of the AGO prices against the years can be represented in a diagram as shown in figure 4.22.

Figure 4.22

Independent: YEARS

Dependent Mth Rsq d.f. F Sigf b0 b1
AGOPRICE LIN .873 12 82.43 .000 -4934.9 2.4780



It can be deduced from figure 4.22 that there is a linear relationship between independent variables (years) and dependent variables (prices). The R – Square is 0.873, which translates into 87.3 percent. This means that the line of fitness for the regression is 87.3 percent accurate.

Table 4.13 REGRESSION FOR DPK

X	Y	X ²	XY
-7	0.40	49	2.8
-6	0.50	36	3.0
-5	0.50	25	2.5
-4	2.75	16	11
-3	6.00	9	18
-2	6.00	4	12
-1	6.00	1	6
1	6.00	1	6
2	6.00	4	12
3	17.00	9	51
4	17.00	16	68
5	17.00	25	85
6	24.00	36	144
7	38.00	49	266
0	147.15	280	687.3

$$\begin{aligned}\therefore \hat{b} &= \frac{687.3}{280} \\ &= 2.45\end{aligned}$$

$$\begin{aligned}\hat{a} &= \frac{147.155}{14} \\ &= 10.51\end{aligned}$$

from the table 4.13 when $x = -6$

$$Y = 10.51 + 2.45x$$

$$1990 = 10.51 + 2.45(-7)$$

$$= 10.51 - 17.15 = -6.64$$

$$1991 = 10.51 + 2.45(-6)$$

$$= 10.51 - 14.7 = -4.19$$

$$1992 = 10.51 + 2.45(-5)$$

$$= 10.51 - 12.25 = -1.74$$

$$1993 = 10.51 + 2.45(-4)$$

$$= 10.51 - 8.8 = 0.71$$

$$1994 = 10.51 + 2.45(-3)$$

$$= 10.51 - 7.35 = 3.1$$

$$1995 = 10.51 + 2.45(-2)$$

$$= 10.51 - 4.9 = 5.61$$

$$1996 = 10.51 + 2.45(-1)$$

$$= 10.51 - 2.45 = 8.06$$

$$1997 = 10.51 + 2.45(1)$$

$$= 10.51 + 2.45 = 12.96$$

$$1998 = 10.51 + 2.45(2)$$

$$= 10.51 + 4.9 = 15.41$$

$$1999 = 10.51 + 2.45(3)$$

$$= 10.51 + 7.35 = 17.86$$

$$2000 = 10.51 + 2.45(4)$$

$$= 10.51 + 9.8 = 20.31$$

$$2001 = 10.51 + 2.45(5)$$

$$= 10.51 + 12.25 = 22.76$$

$$2002 = 10.51 + 2.45(6)$$

$$= 10.51 + 14.7 = 25.21$$

$$2003 = 10.51 + 2.45(7)$$

$$= 10.51 + 17.15 = 27.66$$

The trend values for the years 1990 – 2003 are represented in table 4.14 while the trend values for the predicted future years are shown on table 4.15.

Table 4.14: TREND VALUES FOR DPK, 1990 – 2003.

Year	$\hat{Y} = 10.51 + 2.45X$
1990	-6.64
1991	-4.19
1992	-1.74
1993	0.71
1994	3.1
1995	5.61
1996	8.06
1997	12.96
1998	15.41
1999	17.86
2000	20.31
2001	22.76
2002	25.21
2003	27.66

**TABLE 4.15 THE PREDICTED FUTURE TREND VALUES FOR DPK,
1990 – 2003.**

YEAR	$\hat{Y} = 10.51 + 2.45X$
X = 8, 2004	30.11
X = 9, 2005	32.56
X = 10, 2006	35.01

$$2004 = 10.51 + 2.45(8)$$

$$= 10.51 + 19.6 = 30.11$$

$$2005 = 10.51 + 2.45(9)$$

$$= 10.51 + 22.05 = 32.56$$

$$2006 = 10.51 + 2.45(10)$$

$$= 10.51 + 24.5 = 35.01$$

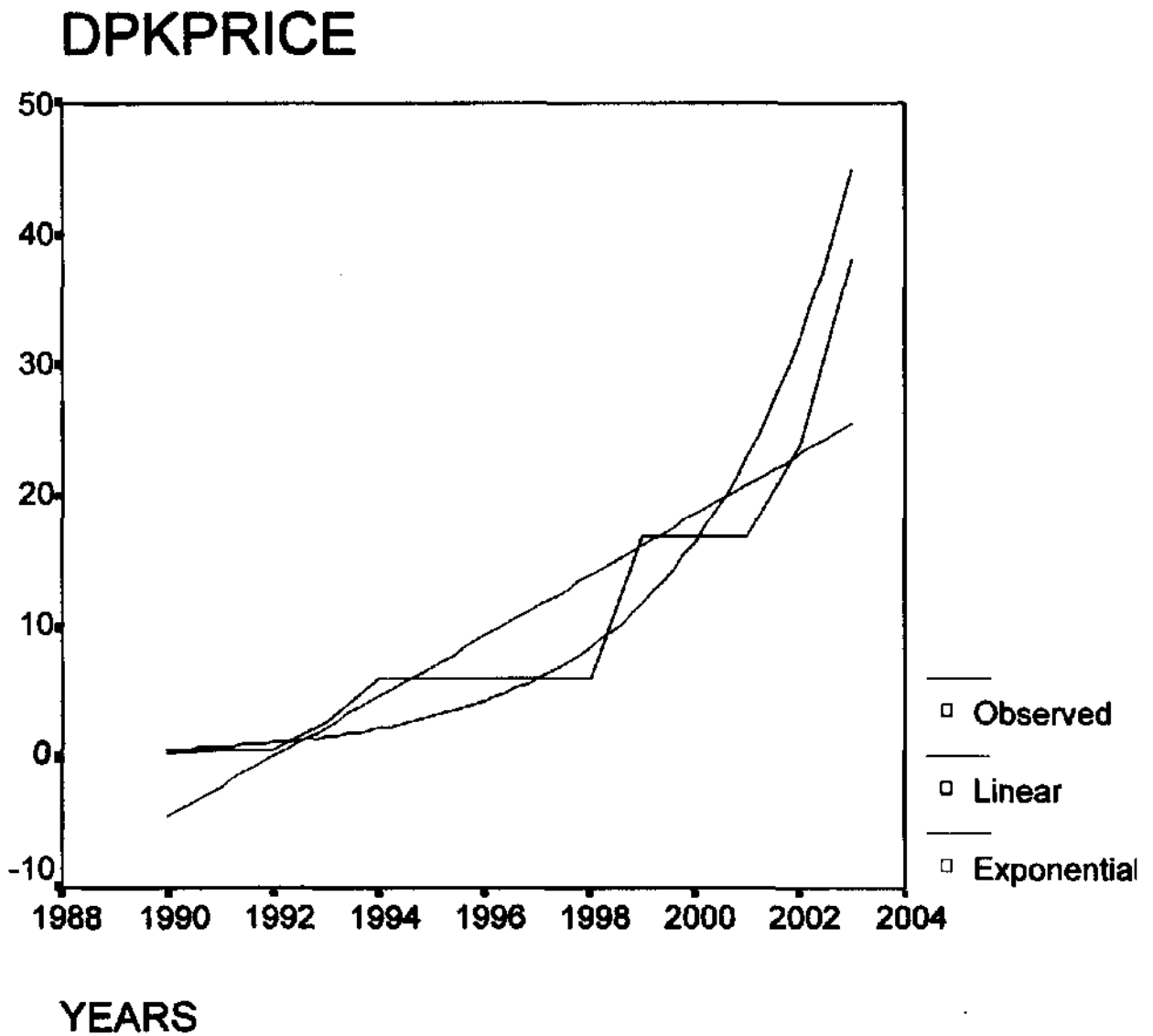
When $X = 8$ in 2004, the predicted trend value for DPK is 30.11; when $X = 9$ in 2005, the trend value rises to 32.56 and in 2006 when $X = 10$, $Y = 35.01$. It can therefore be predicted that the prices of DPK will continue to rise during this period.

Further, this regression equation is further represented in a graphical form in figure 4.23.

Figure 4.23.

Independent: YEARS

Dependent	Mth	Rsq	d.f.	F	Sigf	b0	b1
DPKPRICE	LIN	.793	12	46.09	.000	-4599.2	2.3089
DPKPRICE	EXP	.883	12	90.50	.000	1.1-288	.3329



From figure 4.23 we can observe that the linear model that was used cannot fit the data very well. This is because the R – Square of 0.793 or 79.3 percent does not fit the data better than an exponential model which has an R – Square of 0.883 or 88.3 percent.

4.4 MAJOR FINDINGS.

From the results of the analyzed data and the documents content analyzed the following major findings can be established.

- i. There is no relationship between the increase in the prices of petroleum products with an improvement in the capacity utilization of Nigeria's refineries. This debunked the claim by government that benefits accruing from price increases would be used to repair the refineries so that they operate at full capacity.
- ii. That the increases in the prices of petroleum products always have a multiplier effect in the economy. This can be seen in corresponding rises of goods and services.
- iii. Going by the trend values for PMS, AGO and DPK, it can be predicted that these prices would continue to rise from 2004 – 2006.
- iv. That out of the three products, PMS, AGO and DPK, there is a greater demand for PMS and that the annual demand for all three products will continue to rise.
- v. That price increases were more frequent from 1999 to 2003 and this frequency is likely to continue for the coming years. From the graphs (figures 4.13, 4.14 and 4.15) we can gather that there was a price freeze between 1994 – 1998.

In line with the objectives of the study and research questions raised, it can be argued, on the strength of analysed literature that, deregulation is not ripe for the nature and character of the Nigerian economy. Similarly, it can be posited that deregulation can only make an impact in a situation whereby the market forces decides both the supply side and the demand side of the petroleum products. In the case of Nigeria deregulation is reduced to arbitrary price increases on the part of government. Worst still, the supply side is still not deregulated as NNPC and other importers operate subject to the whims and caprices of government policies, simply put, it is government that decide the supply side.

Further, it can be posited that, there is no sincerity of purpose and serious commitment on the part of government and NNPC officials to repair the refineries. This fact can be buttress if one visualizes the colossal amount of money spent in the repairs of the refineries or the indictment of corruption by the Revenue Allocation and Fiscal Commission against the NNPC officials.

Another finding in line with the research question is that, on the overall, NNPC and government officials are more interested in fuel importation than in the repairs of the refineries. Because with importation, huge profits can easily be netted thereby avoiding the rigmarole and complex activities involved in setting up refineries.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 INTRODUCTION.

This is the final section in the main body of this research project. It attempts to provide an overview of the study. It will briefly summarize chapters 1 – 4. the conclusion will relate to the basic research questions and hypotheses and lastly recommendations will be offered.

5.2 SUMMARY.

This study is aimed at appraising the impact the deregulation of petroleum products prices would have on the Nigerian economy. The study was structured into a five – chapter report.

The general introduction was presented in chapter one where the history of the price increases of petroleum products was discussed and how such increases were often accompanied by protests from the mass of Nigerians. Apparently, this constitutes a problem, moreso given the fact that the Nigerian economy came to be crisis ridden. A number of objectives were established so that a sense of direction can be identified for the research project. Similarly a statement of hypotheses and research questions were raised to further give a sense of bearing and direction for the project. It is also shown that, a study of this nature was of tremendous significance given the fact that petroleum products play a crucial role in Nigeria's economic activities.

The review of related literature was featured in chapter two. A detailed X – ray of the Nigerian economy was carried. It was shown that the mixed economy system adopted by Nigeria at independence explained state intervention in the ownership and control of the national economy. At independence Nigeria relied mainly on agricultural activities, however the oil boom of 1973/74 relegated agriculture to background and oil has ever since become the mainstay of Nigerian economy. Given the nature of over dependence on oil revenue coupled with gross financial squandermania Nigerian economy was engulfed by crisis. In 1986, the government embarked on economic reforms based on the suggestions of the Breton Woods institutions consequently government began to withdraw its subsidy from the petroleum products.

Chapter two also featured when the first oil cargo was exported in 1958, the evolution of NNPC and the installed capacities at Nigeria's four refineries: two in Port – Harcourt, one in Warri and one in Kaduna. The arguments in favour or against the deregulation were succinctly presented.

Chapter three contained the techniques, methodologies and strategies used in the project. A multi – method approach to research design was used. The instruments used for data presentation were: bar charts, multiple bar charts and line charts while the Pearson's correlation and regression were used for analysis.

Presentation and analysis of data were featured in chapter four. A number of tables and graphs were used to present the data in various forms. The SPSS computer software was used to construct the graphs and test the hypotheses. From the results of the correlation analysis, we can gather that the increase in the prices of petroleum products does not

necessarily translate into the repairs of the nation's refineries as being claimed by government. Similarly, we can also gather that the increase in the prices of petroleum products leads to a high cost in the prices of goods and services.

5.3 CONCLUSION.

When government resolved to deregulate the downstream sector of petroleum products, the official explanation was that deregulation was a brilliant policy move, which would empower local business, ensure competition and efficiency and the regular availability of fuel. Government even promised at that time that prices would go down, and that consumers would have choices. And more importantly the country's refineries would be fully operational thereby reducing the landing cost of imported refined petroleum.

However, the reality is that deregulation as introduced by the Nigerian government is not working. As a matter of fact, the oil sector is still a regulated one because the government or its agents are still involved in fixing prices through administrative fiat. Deregulation is meant to make government hands off its control on NNPC, privatized the refineries and attracts private investors. None of these appear to receive any serious commitment. Price hikes appear to be synonymous with deregulation.

Apparently the instrument that would cushion in deregulation are not in place. Prices of petroleum products are not immutable or sacred. They can change if the economic reality dictates. But what is wrong is for government to ignore the corollaries that should go with the increase. If

economic factors should compel price increases, the same factors should compel an upward review of salaries and wages.

The so – called subsidy does not actually exist. What exists in real terms is the corruption amongst NNPC and government officials being subsidized. Therefore cost of graft and inefficiencies are built into the pump price. When the ordinary man in the street buys fuel to the tune of ₦3, 000.00 that cost covers both the petrol and cost of graft and inefficiency.

From the above analysis, this project concludes that the Nigerian economy is not developed to an extent where it can comfortably accommodate the phenomenon of deregulation. Nigeria requires more of economic and technological development and improved per capital income before it embarks on deregulation.

5.4 RECOMMENDATIONS.

Based on the problems highlighted in this work and the discoveries made, this study make the following recommendations, which may make the government to modify its policy action on the phenomenon of deregulation.

- a) Diversification of the supply base: - The government should intensify efforts to diversify the supply base of petroleum products. If this can be achieved the dependency on importation will be reduced to the barest minimum. More private refineries should be licensed and preference should be given to the Nigerian citizens.
- b) Diversification of the economy: - The government should with all serious intention and commitments ensure the diversification of the

Nigerian economy. Nigeria is blessed with abundant natural resources and a good farmland, if these could be properly harnessed the economy of Nigeria will experience a sustained growth and development.

- c) The need to pay living wages and salaries: - Majority of Nigerians cannot take home their salaries and wages because it is consumed by a number of overhead costs. And in the past few years, the government usually effect price increases of petroleum products while nothing is done to augment the predicaments that usually accompany such increases. This set up depresses demand and consequently lower the standard of the people. Increase in wages and tax cuts will make it possible for people to have more money to spend. When people spend they regenerate the economy making it vibrant and buoyant. A situation where you extract from the economy without giving back is anomalous. When this happens the economy will slump. Therefore government should set up a machinery to raise salaries and wages.
- d) Re – organization at NNPC: - Government should ensure that all the corrupt elements and deadwoods at NNPC are sacked. The mandatory turn around maintenance should be done every two years. NNPC should operate in cost – efficient and cost effective manner.
- e) Need for a continuous government involvement: - There is the needs for government to continue to subsidize the cost of production for petroleum products. If subsidy is the price the government has to pay to ensure peace and stability in the polity and by extension the

survival of democracy it is worth it. Deregulation should not be pursued as an article of faith. It should be in the interest of Nigerians. Therefore when the economy developed to such a level where it can comfortably accommodate deregulation then it can be implemented.

f) All the governments of Nigeria should maintain a nationalist stance: -

All governments in Nigeria whether present or incoming should maintain a high sense of patriotism and nationalism. They should cherish and promote the country's sovereignty and territorial integrity. They should not embark on deregulation with the view of satisfying the aspirations of the IMF and the World Bank.

g) Provision of basic infrastructures: - Successive Nigerian governments always explain that the excess funds that may accrue from price hikes would be channeled in the provision of roads, medical and health, a mass transit scheme, education etc. however such promises have become deceitful. To rekindle the lost confidence in government amongst Nigerians, government should with all seriousness and commitment provide such infrastructures.

h) Recognition of labour – unions: - The government should recognize labour movements as enshrined in the tenets of the International Labour Organization (ILO). Labour movements should have a right to a strike and the government has a duty to call for negotiations.

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