

THE ECONOMIC PERFORMANCE OF INTERNATIONAL

OIL COMPANIES IN NIGERIA:

The Effect of Fiscal Taxation and the Separation of Ownership and Control

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ABSTRACT

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Title of the Investigation:

THE ECONOMIC PERFORMANCE OF INTERNATIONAL OIL COMPANIES IN NIGERIA: The Effect of Fiscal Taxation and the Separation of Ownership and Control.

This research investigates the tax policies of the Nigerian government and the separation of ownership and control and the possibility that they impact on the economic performance of the international oil companies operating in Nigeria.

The key areas of the research include a literature review which concentrates on both shareholder and stakeholder theories in corporate governance and on the separation of ownership and control. The literature review is also on government control mechanisms, including state ownership of corporations and taxation. Another key part of this research is the investigation of the relationship between types of contract between host government and the operating companies, and the companies' economic performance in relation to contract type.

The second part of this research examines the relationship between the variables representing fiscal taxation and those representing economic performance. Given that there are essentially two types of contracts operating in Nigeria's oil and gas exploitation business, that is, Joint Venture (JV) and Production Sharing Contract (PSC), these two formed the basis of the research. For the purposes of measuring economic performance, the

unit cost of production and gross margin per barrel were chosen as the variables for measuring the impact of the separation of ownership and control and the impact of fiscal taxation on the economic performance of the operating companies.

Data obtained from secondary sources served as the basis for the quantitative analysis employed in this research, and the results obtained were statistically tested before any interpretation and recommendations were suggested. Interviews were also conducted for the qualitative aspect of this study in order to obtain information on the factors that influenced Nigeria's oil and gas exploration and production fiscal policy formulation in the past.

This research provided the opportunity to arrive at certain conclusions which, even if they sometimes appeared obvious, were never previously empirically substantiated, and the corroboration of some existing theories as being applicable to the Nigerian situation. They also provided a basis for suggesting the inappropriateness of some existing concepts or theories in their application to Nigeria's oil and gas exploration and producing companies.

For example, the results suggest that the existence of separation of ownership and control does not guarantee optimization of economic performance (or maximization of wealth) for the production sharing contract type in oil companies operating in Nigeria, even if they do elsewhere. Fiscal taxation was also suggested as critical to economic performance but possibly not the only variable impacting on the economics of petroleum exploitation in Nigeria. This research provided other possible areas for further research in both fields of corporate governance and fiscal taxation.

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PREFACE

It is now 44 years since Nigeria became independent from British colonial rule in 1960. Just about the time when the struggle for independence would end, commercial exploitation of petroleum crude oil commenced at Oloibiri, Rivers State in 1958. The entire country was licensed to SHELL 'Darcy as the sole international oil company to explore and produce crude oil.

Since independence, the oil and gas exploration and producing petroleum industry (upstream sector) has evolved. The highlights include a number of licensing rounds, Nigeria's membership of the Organisation of Petroleum Exporting Countries (OPEC), the evolution of phases in Joint Venture (JV) partnerships, the signing of the first Production Sharing Contracts (PSC) with Ashland Oil Company, USA in 1973, the licensing of marginal fields to indigenous companies and the discovery of oil and gas reservoirs offshore.

Just as was typical of most developing economies after independence, the control of natural resources and the maximization of revenue generation therefrom were key objectives in the formulation of Nigeria's fiscal policies governing the operations of the international oil companies in the country.

As a result of the 1971-73 oil revolution which marked the phenomenal increase in crude oil price and the founding of OPEC (with the attendant market share control and price fixing policies), OPEC member states were locked in complex contract

formulation and negotiation with international oil companies. It is believed that some oil and gas fiscal regimes hinder investment, despite the intentions of the host countries to employ these very contracts to attract international oil companies and thereby develop their national economies through the exploitation of natural resources, like petroleum crude oil and gas.

This research investigates the relationship between the contract types, fiscal taxation (through which the government seeks to control its economic interests) and the economic returns to the operating oil and gas companies in Nigeria. The data employed in this empirical study are secondary data and were sourced from the operating companies; the Nigerian Inland Revenue Service unpublished data, and published data from various public sources.

Data analysis conducted is quantitative using statistical multiple regression. The research results contribute additional knowledge to the already existing body of knowledge in highlighting the relationship between contract type (signifying the control level) and economic performance, as well as the significance of crude oil prices and fiscal taxation levels to the economic performance of the operating companies in Nigeria. This study also highlights the likely areas of further research particularly with reference to other OPEC countries and other production sharing contracts in OPEC and non-OPEC countries.

DEFINITIONS

For the purposes of this research, some of the key terms are defined below:

Fiscal Taxation – This refers to the taxes levied by the government of Nigeria as a means of controlling its economic interests, and with a view to maximizing revenue generation. It comprises Royalty and Petroleum Profit Tax, both of which are sometimes referred to as ‘Government Take’.

Separation of Ownership and Control – This is to be understood in the context of Corporate Governance and as a factor upon which control of management by majority shareholders is predicated in corporate organisations and defined as the extent of equity holding by other owners as separate from the equity held by the company’s management.

Economic Performance is defined through profitability related variables – cost per barrel of production and gross margin, which are used to mirror the extent of the impact of fiscal taxation on the economic returns available to the operating companies.

A barrel is a measure for quantity of liquids and it is equivalent to 159 litres. It is the usual measure for stating quantities of crude oil.

ACKNOWLEDGEMENT

I am grateful to God for making the completion of this research study possible. Earning a PhD degree could be onerous and frustrating, but with the exceptional supervisory management skills exhibited by my supervisors, my research was less onerous, though not less tasking with their demands for exceptionally high academic standards.

I am therefore very grateful to my two supervisors Professor Philip Hardwick and Professor Steve Letza who have contributed immensely to the attainment of academic excellence in this research. Their high level of supervision and encouragement will not be forgotten.

I should like to thank both the academic and administrative staff of the School of Finance and Law for their support in the accomplishment of this research. My special appreciation goes to Jane Gwizdala for her unflinching support and wonderful coordination.

I also wish to thank various staff of the Nigerian National Petroleum Corporation, the Federal Inland Revenue Service and the oil companies in Nigeria.

I should not forget to express my appreciation to my wife and children, my mother, sisters and in-laws, brethren and friends, thank you and God bless you all. Amen.

DEDICATION

Throughout the period of this research, some people have shown tremendous support and consideration for me. To my darling wife Olufemi mi, who has been a very resilient, loving and wonderful encourager and support; my lovely daughter Oluwadunsin and my dear son Oluwatofunmi, I offer my apologies for being unfaithful or for not being always there for you in the last three years of this study. I am sorry, but thankful to you all for your support and for coping with me. It is to the glory of God that I dedicate this research to you, 'Enyin Eniyan Mi', my family.

CHAPTER 1

INTRODUCTION

1.1 Background to the Study

This research began with the knowledge that certain contract types in business are better suited to certain economies while other contract types are not. Earlier in the life of Nigeria's oil and gas industry, government tended to believe in the need to control the operations of the international oil companies engaged in petroleum exploitation. What is not clear is the desirability or appropriateness of the chosen contract type in terms of the economic advantages they provide for both government and the oil companies.

While Nigeria's membership of the Organisation of Oil Exporting Countries continues to generate debate, the economic implication of its membership, positive or not, is yet to be substantiated using empirical data. Similarly, the adoption of the Production Sharing Contract (PSC) as against the Joint Venture (JV) has not been shown to serve the economic well being of the country in any empirical study.

Furthermore, there has not been any study on the impact of the use of fiscal taxation as an instrument for the realisation of the country's revenue generation without the creation of a largely one-sided return on investment (in favour of the host government), with much reduced returns to the operators. These issues informed the need to carry out an empirical study that verified or dismissed these ideas and other existing theories in this field of study.

1.2. Structure of the Thesis

The thesis is structured with a view to providing a clear understanding of the petroleum industry and the peculiarities of the Nigerian upstream petroleum sector.

The structure also includes a comparison of the UK's petroleum industry's upstream sector with Nigeria's. The reasons for this comparison are that:

- a. Nigeria was the UK's former colony, with the entire legislative process of commercial law and business practices predicated on the UK Common Laws.
- b. Nigeria's flag ship crude oil, the Bonny Light, has similar specific gravity to the UK's 'Brent' both of which attract similar spot market prices.
- c. Nigeria's daily crude production of two million barrels per day is similar to the UK's.

This thesis is predicated on a quantitative analysis of data obtained from secondary sources on Nigeria's crude oil and gas production, costs, revenue and taxes paid over a ten year period for the part of the study concerned with corporate governance and over a thirty year period for the section on fiscal taxation.

Essentially, the method of analysis is quantitative and deductive, with the use of both descriptive statistics and regression analysis.

1.3. Overview of the Petroleum Industry

1.3.1 What is Petroleum?

Petroleum is derived from two Greek words 'petro' and 'oleum' both of which mean rock and oil respectively. The word petroleum therefore refers to the oil that is found in rocks.

Oil and natural gas, together with coal, are referred to as fossil fuels. Petroleum oil and gas

were formed millions of years ago and are finite resources, meaning that one day, if additional deposits are not found, already discovered reserves will be totally used up because they are irreplaceable.

Prior to its discovery, Egyptians and Sumerians used materials similar to oil (such as pitch) in coating their canoes (as waterproofing) and as mortar in building houses as well as in cementing blades to handles in the early civilisation about 2000 BC.

Petroleum is a naturally occurring resource, which exists in the three phases of gas, liquid and solid states. When in the gaseous state, it is called natural gas. The liquid and solid states of petroleum resource are called crude oil and tar sand respectively.

In all its forms, petroleum is an organic and complex compound. They belong to a group of chemical compounds called hydrocarbons. Hydrocarbons have the inclusion of hydrogen and carbon as the main elements in their chemical composition. Apart from the presence of hydrogen and carbon, petroleum oil, gas and tar sand also contain such elements like sulphur, oxygen and nitrogen.

1.3.2 How Is Petroleum Formed?

According to the organic theory of the origin of petroleum, it is believed that with the aid of weathering agents like wind, water, mud-slides, glacier movements, plants and animals get carried away together with rock sediments which occur when both igneous and metamorphic rocks get weathered, and are deposited in places where sedimentation occurs. The decomposition of such organic materials, like plants and animals, under extreme temperature and pressure of the subsurface formation and in the presence of metallic

catalysts, is said to result in the formation of oil and gas; with the oil arising from animals and the gas from plants.

There are however some other schools of thought on the origin of petroleum oil and gas. For example, some believe that it is not possible to have had that much mass of microscopic organisms resulting in or giving rise to the volume of oil and gas that we presently have as world petroleum reserves. They believe both are just naturally occurring like we have water in the seas and oceans.

1.3.3 Occurrence

About the year 1280AD, oil was first noticed in the form of a fountain around Baku in Russia by the great explorer Marco Polo. Petroleum hydrocarbons are found trapped in reservoirs in sedimentary rocks (rocks formed via the sequential deposition of sediments in sub-surface geological formations in different parts of the world. Petroleum oil and gas have been found in both terrestrial and marine environments while tar sand occurs essentially on land. Oil was first drilled by Colonel Drake in 1859 in the American state of Pennsylvania.

1.3.4 Uses of Petroleum Oil and Gas

Essentially, petroleum oil was used for medicinal purposes before the nineteenth century in addition to being used as pitch for waterproofing. Early in 1800s, Samuel Kier converted petroleum oil into lamp oil by distillation. This gave rise to the growing importance of refined petroleum as we know it today. With advancement in technology, petroleum oil was refined initially to produce lighting oil (kerosene), and later gasoline and automotive gas-oil with the invention of combustion and diesel engines. Thereafter, further refining by

catalytic cracking, polymerisation of olefins and development of plastics gave both petroleum oil and gas wider applications in households and industries.

Present day uses of crude oil and natural gas are as summarised below:

- Transportation fuels (gasoline, jet fuel, kerosene, automotive gas oil)
- Natural gas for electricity power generation and heating
- Petrochemical derivatives: plastics, industrial chemicals, pharmaceuticals, cosmetics etc.

1.3.5 The Structure of the Petroleum Industry

The petroleum industry is divided into two sectors:

(i). The Upstream Sector

This comprises all technical and commercial activities relating to the finding (exploration) and winning/mining (production/producing) of petroleum hydrocarbon oil or gas.

Such activities include:

- Geological and geophysical surveys
- Drilling
- Field development
- Production
- Related services (e.g. well logging, well completion, well servicing, data acquisition etc.)

(ii). The Downstream Sector

This sector involves all technical and commercial activities relating to the following:

- Refining and petrochemicals manufacturing
- Supply and distribution
- Marketing of refined products

The very first oil and gas company incorporated was the Standard Oil Company of New York. It was established by J.D.Rockefeller – a Baptist Deacon and Sunday school teacher. (Yagin D.1998). Because of the predatory activities of Standard Oil which stifled competition and tended to create a monopoly, it was dissolved by a judicial judgement which divided Standard Oil into the following oil companies in America.

- (i) Standard Oil (Exxon Oil Inc.)
- (ii) Mobil Oil Inc.
- (iii) Texas Oil Co. (Texaco)
- (iv) Gulf Oil (later merged with Chevron)
- (v) Amoco
- (vi) Continental Oil Co. (Conoco)

Most of these oil companies are vertically integrated such that their operations include both the upstream and the downstream sector. In terms of corporate organisational structure, there is a clear distinction between the management structure and organisation of the two sectors and they depict the operational peculiarities of each sector. However, both sectors usually have a single board of directors to which the chief operating officers of the two sectors report. Also, at the corporate/executive levels, some of the functions like finance, planning, legal and corporate affairs are controlled from the corporate head quarters. For

the purpose of this study, investigations are restricted to the exploration and production (upstream) sector of the petroleum industry.

1.3.6 The Upstream Sector (Brief Review of Activities)

Petroleum oil and gas when formed occur in the sub-surface formations which are known as reservoirs. It is the places where they are likely to occur or be found that both geologists and geophysicists are engaged in exploring. Together they use scientific knowledge and technology to determine where such oil and gas are trapped. When an area is decided as a possible hydrocarbon bearing formation, further search methods are deployed for confirmation. Two such methods are a geological study of fossils and rock formation and a geophysical seismic survey. Both give rise to a three-dimensional picture of the sub-surface which is needed to determine if there is the occurrence of oil/gas in that location and where in particular.

Drilling is the only sure way to ascertain if there is oil/gas. Drilling is expensive, costing millions of dollars, yet oil/gas may not be found after drilling. The cost also depends on the depth to be drilled and the environment. A place like the North Sea is one of the most expensive places to carry out drilling operation because of the turbulence of the sea. When oil/gas is found, other wells are drilled and production facilities put in place to exploit the reservoir. The major equipment used for production is the production platform whose type and design varies depending on whether it is onshore or offshore production.

1.3.7 Oil and Gas Reserves and Production Figures

Tables 1 to 4 listed below are intended to answer some of the questions that readily agitate our minds with relation to the oil and gas business. Such questions may also minimise the

importance of the kind of investigation which this research study sets out to undertake if left unanswered.

It is expected that tables 1-4 below will provide the answers to such questions as:

- What quantities of oil and gas are left?
- Which countries have more oil and gas than others?
- What is the future of UK and Nigeria oil and gas?
- Which countries actually consume oil and gas most?
- In terms of energy supply to what extent is oil and gas replaceable?
- What is the country of origin of the major oil companies?
- Which countries have national oil companies?
- To what extent can the world be threatened by OPEC supply cuts?

Table 1: World Crude Oil Proved Reserves

<u>Country</u>	<u>At end 1982</u> <u>Thousand</u> <u>Million Bbls</u>	<u>At end 1992</u> <u>Thousand</u> <u>Million Bbls</u>	<u>At end 2001</u> <u>Thousand</u> <u>Million Bbls</u>	<u>At end 2002</u> <u>Thousand</u> <u>Million Bbls</u>	<u>%</u> <u>of Total</u> <u>(2002)</u>	<u>R/P*</u> <u>Ratio</u>
Saudi Arabia	165.3	260.3	261.8	261.8	25	86
Iraq	41	100	112.5	112.5	10.7	>100
UAE	32.4	98.1	97.8	97.8	9.3	>100
Kuwait	67.2	96.5	96.5	96.5	9.2	>100
Iran	55.3	92.9	89.7	89.7	8.6	74
Venezuela	21.5	62.7	77.7	77.8	7.4	74
Russia	N/A	48.5	48.5	60	5.7	22
USA	35	32	30	30.4	2.9	10.8
Libya	21.5	22.8	29.5	29.5	2.8	59
Nigeria	16.8	17.9	24	24	2.3	32.8
China	19.5	24	24	18.3	1.7	14.8
Qatar	3.4	3.7	15.2	15.2	1.5	5.8
Mexico	48.3	51.3	26.9	12.6	1.2	10
Norway	6.8	8.8	9.4	10.3	1.0	8.7
UK	13.9	4.1	4.9	4.7	0.5	5.4
Others	<u>128.8</u>	<u>83.1</u>	<u>101.9</u>	<u>106.6</u>	<u>10.2</u>	
TOTAL	676.7	1006.7	1050.3	1047.7	100	
Total OECD	116.7	108.9	84.5	72	6.9	
Total OPEC	443.3	769.9	818.8	819	78.2	

* The R/P ratio is the reserve/production ratio. It measures the length of time in years it takes to exhaust the current reserve level at the current yearly production level.

Source: BP statistical review of world energy 2003.

Table 2: World Natural Gas Proved Reserves

<u>Country</u>	<u>At end 1982</u> <u>Trillion Cubic</u> <u>Metre (tcm)</u>	<u>At end 1992</u> <u>Trillion Cubic</u> <u>Metre (tcm)</u>	<u>At end 2001</u> <u>Trillion Cubic</u> <u>Metre (tcm)</u>	<u>At end 2002</u> <u>Trillion Cubic</u> <u>Metre (tcm)</u>	<u>%</u> <u>of Total</u> <u>(2002)</u>	<u>R/P*</u> <u>Ratio</u>
Russia	N/A	47.40	47.57	47.57	30.5	81.2
Iran	13.67	19.80	2.3	2.3	14.8	>100
Qatar	1.76	6.43	14.4	14.4	9.2	>100
Saudi Arabia	3.43	5.18	6.22	6.36	4.1	>100
UAE	0.81	5.79	6.01	6.01	3.9	>100
USA	5.78	4.73	5.02	5.19	3.3	9.6
Algeria	3.15	3.62	4.52	4.52	2.9	56.3
Venezuela	1.53	3.58	4.18	4.19	2.7	>100
Nigeria	0.92	3.40	3.51	3.51	2.3	>100
Iraq	0.82	3.10	3.11	3.11	2.0	>100
Indonesia	0.84	1.82	2.62	2.62	1.7	37
Australia	0.50	0.52	2.55	2.55	1.6	74
Malaysia	0.96	1.92	2.12	2.12	1.4	42
Norway	1.64	2.00	1.25	2.19	1.4	34
UK	0.72	0.54	0.73	0.70	0.4	7
Others	<u>49.37</u>	<u>28.51</u>	<u>28.83</u>	<u>27.74</u>	<u>17.8</u>	
TOTAL	85.90	138.34	155.64	155.78	100	
Total OECD	15.81	15.80	14.87	15.38	9.9	
Total OPEC	26.93	52.70	67.57	67.72	43.5	

Based on year 2002 figures, Nigeria has the tenth and ninth largest crude oil and gas reserves respectively in the world. The United Kingdom's crude oil and gas reserves are the fifteenth largest in the world for both. These positions make the two countries significant in the dynamics of oil and gas exploitation.

Source: BP statistical review of world energy 2003.

Table 3: World Largest Producers and Consumers of Crude Oil

<u>Production</u>			<u>Consumption</u>		
<u>Country</u>	<u>Oil Prod. ('000 BPD)</u>	<u>% of Total</u>	<u>Country</u>	<u>Consumption ('000 BPD)</u>	<u>% of Total</u>
Saudi Arabia	8680	11.8	USA	19708	25.4
Russia	7911	10.7	China	5362	7.0
USA	7320	9.9	Japan	5337	6.9
Mexico	3585	5.0	Germany	2709	3.6
China	3382	4.8	Russia	2469	3.5
Iran	3366	4.7	South Korea	2288	3.0
Norway	3330	4.4	India	2090	2.8
Venezuela	2942	4.3	Canada	1988	2.6
Canada	2880	3.8	France	1967	2.6
UK	2463	3.3	Italy	1943	2.5
UAE	2270	3.0	Brazil	1849	2.4
Iraq	2030	2.8	Mexico	1791	2.3
Nigeria	2013	2.7	UK	1675	2.2
Kuwait	1871	2.6	Spain	<u>1520</u>	<u>2.1</u>
Brazil	1500	2.1		52696	70
Algeria	1659	2.0			
Libya	1376	1.8			
Indonesia	<u>1278</u>	<u>1.7</u>			
	59856	81.0			
Others	<u>14076</u>	<u>19.0</u>	Others	<u>23051</u>	<u>30</u>
TOTAL	73935	100	TOTAL	75747	100
Of which:			Of which:		
OPEC	28240	38.4	OPEC	485	0.64
OECD	21516	28.4	OECD	47457	62

Source: BP statistical review of world energy 2003.

From the available figures above, eighteen countries produce 81% of total daily world crude oil. Of these, Nigeria is the 13th largest producer with 2.8% of total production, while the UK is the 10th largest producer, producing 3.3% of the world total.

Fourteen countries consume 70% of total world crude oil daily production. While Nigeria's consumption is not included amongst the top consumers, the UK is the 13th largest

consumer of crude oil in the world, consuming 2.2% of world total, with the USA easily topping the list with over 25%.

Most of the largest producers are not part of the largest consumers. This indicates a low level of industrialisation among the largest producers. This forms the basis of the significant importance of petroleum revenue to these developing oil producing economies like Nigeria. The prevailing scenario is that they do not have any significant revenue from other sources like high technology or industrial products and services

Table 4: World Largest Producers and Consumers of Natural Gas (2003)

<u>Country</u>	<u>Production</u> Billion cubic metre (bcm)	<u>%</u> <u>of Total</u>	<u>Country</u>	<u>Consumption</u> Billion cubic metre (bcm)	<u>%</u> <u>of Total</u>
Russia	554.9	22	USA	667.5	26.3
USA	547.7	21.7	Russia	388.4	15.3
Canada	183.5	7.3	UK	94.5	3.7
UK	103.1	4.1	Germany	82.6	3.3
Algeria	80.4	3.2	Canada	80.7	3.2
Indonesia	70.6	2.8	Japan	77.4	3.1
Norway	65.4	2.6	Ukraine	69.8	2.8
Iran	64.5	2.5	Iran	67.9	2.7
Netherlands	59.9	2.4	Italy	63.9	2.5
Saudi Arabia	56.4	2.2	Saudi Arabia	56.4	2.2
Uzbekistan	53.8	2.1	Uzbekistan	52.4	2.1
Malaysia	50.3	2.0	France	42.8	1.7
Turkmenistan	49.9	2.0	Mexico	42.1	1.7
UAE	46.0	1.8	Netherlands	<u>39.3</u>	<u>1.6</u>
Argentina	34.8	1.4		1825.7	72
Mexico	34.8	1.4			
Qatar	<u>29.3</u>	<u>1.2</u>			
	2085.3	83			
Others	<u>442.3</u>	<u>17</u>	Others	<u>709.8</u>	<u>28</u>
TOTAL	2527.6	100	TOTAL	2535.5	100
Total OECD	1090.8	43.2	Total OECD	1372.7	54.1
Total OPEC	347.2	13.7	Total OPEC	280	11

Source: BP statistical review of world energy 2003

Despite Nigeria's large gas deposits, exploitation is very low unlike in the UK. The key reason is that gas exploitation depends largely on the availability of local end uses/ applications which are more pronounced with industrialisation.

The UK is the third largest consumer and the fourth largest producer of natural gas. Both situations are due to its level of industrialisation and its availability or reserve level.

1.3.8 Oil and Gas Business and Economics

The economic importance of oil and gas is great if we consider how the products from oil and gas affect our daily lives. Similarly, fluctuations in oil prices affect virtually every other business and globally too. About 65% of the world's energy consumption is derived from oil and natural gas with around 30,000 different products also derived from oil/gas. Without oil/gas it appears that the economies of the industrialised world would grind to a standstill.

In the same vein, the economies of most oil and gas producing and exporting countries would certainly collapse without the oil/gas revenue. This realisation is what makes oil and gas the very life blood of the world economy, which is why the politics of it are more complex than the product itself or its economics. The ability of the British Royal Naval warship to change from coal to fuel oil fired engines helped to win the Second World War for the UK and the Allied forces. The invasions of the Suez Canal and the Gulf Wars are some of the events that explain the importance of oil and oil gas for the global economy.

1.4 Conclusion

In conclusion, it is important to note that oil and gas are irreplaceable naturally occurring resources, whose application for the human race has grown significantly over the years. Also, the petroleum industry can be regarded as one of the highly integrated and structured industries, with just about ten major multinational players.

Tables 1 to 4 provide insights into the levels of reserves available, the position of both Nigeria and the UK relative to the global outlook and the future of both countries in terms of production years left if no additional reserves are added. Nigeria is quite significant in terms of oil production, though her gas reserves are significant but largely untapped, while the UK is a major player in both oil and gas.

CHAPTER 2

DESCRIPTION AND STRUCTURE OF THE PETROLEUM INDUSTRY IN NIGERIA

2.1 Historical Overview

Petroleum oil was first discovered in Nigeria in commercial quantities at Oloibiri, River State in the eastern part of Nigeria in 1958. Since then, Nigeria has been an exporter of oil with Shell as the first oil and gas exploration and producing company in the country. To date, Shell is still a major player and is responsible for 50% of Nigeria's current production of 2 million barrels per day. Before independence in 1960, Nigeria was a West African British colony. Nigeria's population is estimated at 127 million (1991)*. English is the official business language. After over twenty years of military dictatorship, the country returned to democratic rule in 1999. About 90% of its total oil and gas production is landward with current emphasis on increasing seaward/offshore exploration and production.

2.2 Economic Overview*

The national currency is the Naira (N) which exchanges for the GBP at £1.00:N240. The country had a GDP of \$46.2 billion in 2000, a current account surplus of \$0.5 billion, but total external debt of \$30 billion.

* Source: 2003 World Bank Country Report.

The United Kingdom is Nigeria's biggest trading partner. As a result of low gas reserve addition in the North Sea, importation of Liquefied Natural Gas (LNG) from Nigeria is being contemplated. Nigeria's economy is largely dependent on crude oil and gas revenue with over 90% of foreign exchange earnings from petroleum exports.

The new democratic government is undertaking economic reforms which include the privatisation of government parastatals, exchange rate management and phasing out of the petroleum products subsidy. Debt rescheduling for debts owed to bilateral creditors (Paris Club) is also part of the economic reforms embarked upon by the government.

2.3 Structure of Government Supervision of the Oil Industry

Government regulates the petroleum industry through an organisational structure similar to that of UK. The main difference as we will see later is that the government holds equity (shares) in the companies which engage in the exploration and production of oil and gas in addition to holding and exercising supervisory roles and having the entire hydrocarbon resource in the country vested in the government.

Regulation of the industry is exercised through the Directorate of Petroleum Resources (DPR) which is a division in the Ministry of Petroleum Resources. Also, supervision of the activities of oil and gas exploration and producing companies (upstream sector) is exercised through the national oil company, the Nigerian National Petroleum Corporation (NNPC). NNPC is 100% government owned. The government's equity participation in all Joint Venture (JV) operations in Nigeria is managed through the National Petroleum Investment Management Services (NAPIMS) as a separate business unit of the NNPC.

2.4 Legislation Governing Oil and Gas Exploration and Production

The industry is regulated by a number of decrees and legislation. The key legislation is stated in chapter 4. A major highlight of the legislation is that which gives the NNPC a majority interest (between 55 – 60%) in all JVs with foreign international oil companies. NNPC holds 49% in the Nigerian Liquefied Natural Gas (NLNG) company. Joint Operating Agreements (JOAs) are the instruments used to express the equity structure, management structure and accounting procedure for the operations of the joint venture company. All issues relating to the environment are vested in the Federal Environmental Protection Agency (FEPA).

2.5 Licence and Licence Types

For every round of licence bidding, the government issues licences for blocks on which licence holders carry out exploration (using an Oil Prospecting Licence-OPL) and consequently production (using an Oil Mining Licence–OML) upon successful exploration.

Licences are granted upon payment of an application fee and meeting the criteria for award. Thereafter, the government appends its signature which attracts a fee called the Signature Bonus. Annual licence fees are paid as OPL or OML rentals by licence holders.

Licences are of two types:

- (i) Joint Venture (JV) Licence (OPL/OML) – This is the licence given to a corporate entity having more than one shareholder. For every JV in Nigeria, the government through the NNPC is a shareholder. Such JVs are governed by JOAs which the Department of Petroleum Resources issues on behalf of the government.

- (ii) **Production Sharing Contract (PSC) Licence** - A PSC is another type of licence for oil and gas exploration and production used to exploit the hydrocarbon resources in Nigeria and most OPEC countries. Under a PSC licence, the government has no equity in the company but shares in the volume of oil or gas won (produced) by the licence holder. The government's share of production volume after deduction of exploration and production cost (expressed in terms of the value of oil volume) escalates as production volume increases. The oil companies provide all the funding for the operations (100%) under a PSC licence.

2.6 Fiscal Regime

- (i) The government is paid a royalty for all oil and gas produced and sold. The rate depends on whether the licence is for landward (onshore) or seaward (offshore) block or operation. It also depends on the water depth of the block from which the production licence is held by the company.

(ii) **Tax Regime**

- JV licences in which the government has equity participation pay 87.5% of operating profit (after royalty, tax deductibles and tax credits)
- PSC Licences are taxed at 57.5% of the operating profit after royalty and cost oil deductions.

(iii) **Memorandum of Understanding (MOU)**

The government signs an MOU with every JV or PSC Company. The MOU is an instrument with which the government agrees with the companies with respect to incentives that will encourage higher investment capital spending for the exploration and development of the country's petroleum resources. It

also contains details of qualifications for tax credits and deductibles. Each MOU is peculiar to each company and confidential.

2.7 Marginal Fields for Indigenous Participation and Entrepreneurship

Nigeria has numerous fields regarded as marginal because of marginal economic returns on investment from the operation (development) of such fields. According to Nigeria's Oil and Gas Monthly (2002), twenty four marginal fields were offered by the government to investors in December 2001/March 2002. The fields were discovered, evaluated and held as part of the reservoir assets of the international oil and gas operating companies. They were however not developed because they fail to meet the economic yardsticks of their various concession holders.

The government's intention to involve indigenous participation (promotion of local content, development of indigenous oil companies) in the upstream sector drives the re-licensing of such fields to locals as highlighted in the Nigeria's Oil and Gas Monthly (2002). All existing holders and operators of OPLs and OMLs were not allowed to participate in the round of bidding for marginal fields.

The field specific bid which follows the initial pre-qualification (first round bid) will be evaluated by Nigeria's Department of Petroleum Resources and the original lease holder (NNPC/JV Operator) whereby the details of farm-out terms were negotiated. The Petroleum Amendment Decree No 23, 1996 amended the first schedule to the Petroleum Act 1969 concerning the assignment of interests in oil mining leases. The new paragraph 16A permits holders of OMLs, to farm-out any field it considers marginal and lying within its licensed area/concession.

Guidelines for Farming out and Operations of Marginal Fields*

Apart from the provision of the Petroleum Amendment Decree 23, 1996, the government of Nigeria also promulgated guidelines for the marginal fields. Both of these legislations constitute a type of government control on the operations, albeit the economic performance of the operating companies who were the original license holders. The guidelines also stipulate the share holding composition, which is a form of corporate governance directive.

Government controls are sometimes in terms of fiscal taxation. Some fiscal regimes outlined in Memorandum of Understanding (MOU), Joint Operating Agreements (JOA), Production Sharing Agreements (PSA) etc have implications for taxation, investment policy, operational efficiency, profitability, corporate governance and overall corporate performance of the companies that the government seeks to control.

In addition to onshore production (90% of total production of oil and gas), several deepwater discoveries in the Gulf of Benin and Biafra are expected to add to the country's reserves and ensure a bright production future. The recent allocation of Nigeria's marginal fields is as listed in Table 5.

Table 5: Year 2003: Listing of Allocated Marginal Fields to Indigenous Operators*

<u>Company/Operator</u>	<u>Field</u>	<u>% Share</u>
1.Platform Petroleum	Asuokpu/Umutu	100
2.Bayelsa Oil Co.	Atala	100
3.Excell E&P Services	Eremor	100

<u>Company/Operator</u>	<u>Field</u>	<u>% Share</u>
5. Millenium Oil & Gas	Oza	100
6. Network E&P	Qua Ibo	100
7. Universal Energy.Res	Stub Creek	100
8. Frontier Oil	Uquo	100
9. Brittania-U	Ajapa	100
10. Sogenal	Akepo	100
11. EurafricEnergy	Dawes Island	100
12. Movido E&P	Ekeh	100
13. Del-Sigma Petroleum	KE	100
14. Bicta Energy	Ogedeh	100
15. Goland Pet. Dev. Co.	Oriri	100
16. Chorus Energy	Amoji/Matsogo/Igbolo	100
17. Pillar Oil	Umusati/Igbuku	100
18. Prime Energy	Assaramatoru	51
Suffolk Petroleum	“	49
19. Walter Smith Pet.	Ibigwe	70
Moris Pet.	“	30
20. Associated Oil & Gas	Tom Shot Bank	51
Geo-Energy	“	49
21. Sahara Energy	Tsekelewu	51
Africa Oil & Gas	“	49
22. Guarrantee Petroleum	Ororo	55
Owena	“	45

23. Energia	Obodugwa/Obodeti	55
Unipetrol Pet.Dev.	“	45
24. Mid Western Oil & Gas	Umusadege	70
Suntrast	“	30

* Source: The Nigeria Guardian, 2003

2.8 Conclusion

In concluding this chapter, it is obvious that the Nigerian government controls the industry through its acquisition of equity and joint ventures as well as the adoption of two types of contracts governed by various legislation.

The fiscal regime comprises fiscal taxation policies regulated by the Department of Petroleum Resource and the NNPC using both the MOU and the JOA as instruments. The policy of the government to transfer some of the fields previously owned by the international oil companies to indigenous operators also constitutes a form of control of the industry. In the same way, varied tax rates for various contract types are visible policies that could affect the economics of the operating companies.

CHAPTER 3

DESCRIPTION AND STRUCTURE OF THE PETROLEUM INDUSTRY IN THE UK

3.1 Historical Overview*

Petroleum oil and gas were explored and produced, though in non-commercial quantities, on the UK mainland for centuries before the first discovery of commercial quantities (proved reserve) in 1918 in Nottinghamshire. In 1973, the first major onshore oil field was discovered in Wytch Farm, Dorset and it remains Western Europe's largest onshore oil field. The first significant offshore petroleum discovery was in 1965 in the West Sole Field, while the North Sea Fields developments commenced in the mid-1960s. As at the end of 2000, there were 109 oil fields and 87 gas and condensate fields in production off-shore, in the UK continental shelf.

By the end of 1999, the cumulative production of hydrocarbon oil and gas from UK fields stood at 2,445 million tonnes of oil and 14.10 billion cubic metres of gas. In 2002, UK's production was 9 billion barrels of oil and 103.1 billion cubic metres of gas.

Most of the fields in the UK and its continental shelf are regarded as mature. This refers to a field that has been in production for a considerable length of time and having cumulative production of above 50% of its estimated reserve volume. Despite the maturity of this petroleum province, there is still considerable activity in both mature and frontier areas. Frontier areas are geological formations (locations) showing promising preliminary exploratory data that are indicative of the presence and accumulation of hydrocarbons.

The UK has the largest oil and gas industry in the European Union. The industry represents about 4% of GDP in 2000 and 2% of total capital investment. Both multinational corporations and independents privately own all the UK oil and gas companies, unlike the government-investor joint ventures in Nigeria.

The future of the industry in the UK is not in doubt as the government sets the right economic climate to maximise the level of exploration and development so that new discoveries can replace those fields currently being depleted, even though petroleum oil and gas is an irreplaceable natural resource. The Brown Book (2001) for current reserve figures gives the following statistics. Out of the total 109 oil fields and 87 gas fields, there are only 28 producing oil fields (26%) and 11 producing gas fields (13%). The others are not being produced for various economic and non-economic reasons.

3.2 Government Supervisory and Management Structure

The UK government supervises and controls the UK petroleum industry through the Oil and Gas Directorate of the Department of Trade and Industry (DTI). The DTI employs various legislative instruments, like the Petroleum Act 1998, to regulate, co-ordinate and manage petroleum resources in the UK on behalf of the Crown in whom ownership is vested.

In addition to the DTI, there are some other non-profit industry organisations set up either by the government or by the industry operators (and recognised by government) with which the industry is managed. They include:

* Source: The Brown Book 2003, by Department of Trade and Industry, UK.

- (i) UKOOA: United Kingdom Offshore Operators' Association
- (ii) OGITF: Oil and Gas Industry Task Force (Replaced by PILOT)
- (iii) PILOT: An initiative established in 2000 to achieve cost effectiveness in UK oil and gas exploitation in the North Sea continental shelf.
- (iv) LOGIC: Leading Oil and Gas Industry Competitiveness – for promotion of best practice throughout the supply chain.
- (v) ITF: Industry Technology Facilitator – improving the facilitation and flow of new technology to market.
- (vi) NTOG National Training Organisation Groups focusing on training activity and maximising commitment to skills.
- (vii) LIFT: Licence Initiative for Trading – a new website designed to promote licence trading.
- (viii) DEAL Digital Energy Atlas and Library – an interactive map providing an index for UK continental shelf data.

PILOT, which replaced OGITF has the following as members:

- (i) Minister for Energy and Competitiveness in Europe (Chairman)
- (ii) Representatives from the Department of Trade and Industry (DTI), the Department of Health and Safety Executive (HSE), the Department of Environment, Transport and the Regions (DETR), the Treasury, and the Scottish Executive
- (iii) Representatives from all sections of the industry (including operators, contractors, suppliers and trade unions).

In all, there are twenty-three key government and industry members. PILOT's objectives include:

- (a) Lead the industry stakeholders
- (b) Develop strategies for reducing the cost base of UK oil and gas operations against the backdrop of the mature nature of the North Sea and specific conditions in other UK continental shelf areas
- (c) Examine and prioritise initiatives aimed at improving the competitiveness of the UK continental shelf as an oil and gas development province and the supply industry for domestic and overseas market
- (d) Watch over sustainable development, decommissioning, fiscal matters and exports.
- (e) Employ work groups to focus on its designated action areas e.g. new business, regulation and licensing and economic advisory group.

In the UK, the petroleum downstream sector representing oil refining, petroleum products marketing and distribution has its own independent trade organisation known as the UK Petroleum Industry Association (UKPIA).

3.3 UK Oil and Gas Legislation

In the UK, there has been various legislation by acts of parliament with which the oil and gas industry is regulated. The current legislation which has repealed or amended previous acts is the Petroleum Act 1998 with chapter 17 relating to the upstream sector.

(i) LEGISLATIVE FRAMEWORK FOR LICENCES

The Petroleum Act 1988 consolidated the previous primary legislation (including the Petroleum (Production) Act 1934 which vested ownership of oil and gas within Great Britain and its territorial sea in the Crown and gave the government rights to grant licences to explore for and exploit hydrocarbon resources and those on the UK continental shelf).

The UK continental shelf has been defined under the Continental Shelf Act 1964 following the conclusion of boundary agreements with neighbouring countries. The other regulations in force are the Petroleum (Production) (Seaward Areas) Amendment Regulations 1992, 1995 and 1996 for offshore licences; and the Petroleum (Production) (Landward Areas) Regulations 1995 for onshore licences.

The terms of licences vary according to whether they cover seaward or landward production. The terms also vary with particular Licensing Rounds and are dependent on the extent of exploration and development that has already taken place in the acreage on offer. Applications for licences are assessed on the basis of the same criteria for respective licensing rounds.

(ii) LICENCE TYPES

(a) Seaward Licences: These are of two types.

Exploration Licences – These are exclusive permits to holders to conduct non-intrusive surveys, such as seismic or gravity and magnetic data acquisition over any part of the UK continental shelf that is not held under a production licence. Such wells drilled for exploration must not exceed 350 metres except with the Secretary of State's approval.

Production Licences – These grant exclusive rights to holders to search and bore for petroleum in the area of the licence covering a specified block or blocks. They are usually issued in periodic 'Licensing Rounds' when the Secretary of State For Trade and Industry invites applications in respect of a number of specified blocks or other areas. Application fees are charged and successful applicants make an initial rental payment for the first term

of the licence followed by annual rentals on an escalating scale. There are other specific conditions attached to a successful application.

(b) Landward Licenses

The landward regimes apply in Great Britain to all territory above low water mark and within 'bay closing lines' as defined in regulations; a separate regime is operated in Northern Ireland. The Petroleum (Production) (Landward Areas) Regulations 1995 introduced a single licence, the Petroleum Exploration and Development Licence (PEDL) as the principal landward licence over the previous acts.

(c) Multi Block Licenses

A single licence that covers more than one block which may not necessarily be adjacent to one another. Further rationalisation of multi-block licences are allowable, e.g. a licensee may wish to relinquish particular blocks contained in its multi-block licence later in the life of the licence.

3.4 Joint Operating Agreements (JOA)

These refer to a set of policies affecting the way and manner in which the holders and operators or parties to the company holding production licences will run and manage the licensed blocks in relation to the interests of government without active (share holding) participants of government.

Where JOAs occur, the following areas are covered:

- Management Structure
- Financial and Accounting Procedure
- Equity Structure

- Board of Directors' Composition
- Technical Agreements
- Training

The DTI provides guidance notes which prescribe the procedures that should be followed by companies seeking approvals for proposed JOAs as provided for in the model clauses in licences.

3.5 UK Oil and Gas Fiscal Regime

The economics, financial performance and efficiency of the oil and gas industry is always affected by the type of fiscal regime the country operates.

While the fiscal regime (taxes, royalty payable by holders of exploration and production licences) is dictated by government, there are many other factors which affect the economics of the upstream oil industry's investment. Such factors fall outside the control of government, e.g. geological prospectivity, reservoir system, crude oil and natural gas prices, field development costs. However, it is known that the UK continental shelf is a high cost area by international standards and this affects the way government formulates its fiscal policy.

For example, government is putting up stricter consents policy for gas fired power stations. This is causing a depression in demand for new gas, i.e. (low demand growth projection) against the background of natural gas accounting for 38-40% of UKCS production.

The UKOOA, for example, also expects particular amendments to fiscal regimes as earlier formulated and employed by government before the UK continental shelf became mature fields compared to now. Similarly, the nearly 70% marginal tax rate is regarded by

UKOOA members as a discouragement for new incremental developments in these mature fields. They argue for a lower rate to stimulate incremental investment in the mature fields.

3.6 The UK continental shelf taxation

- The tax regime is designed to secure an appropriate share of profits for the country as well as provide a stable, attractive and economical investment climate for the industry
- The system is under continuous updating as factors affecting the industry and world economics change.

The main features of the current tax regime are:

- (a) **Royalty:** A royalty is paid for every production licence. The royalty rate is 12% of the landed value of the petroleum won (produced) and sold less an allowance for the cost of bringing the petroleum ashore and treating it. Royalty is not payable for any field approved after March 31, 1982. Since January 1, 2003 the royalty payment was abolished for all fields in the UK.
- (b) **Petroleum Revenue Tax (PRT):** This tax which was introduced by the Oil Taxation Act 1975, and is a tax on profits related to separate geological and technically determined fields, is charged on the difference between income and expenditure with allowances designed to ensure that it bites only on the large, most profitable fields. A significant reform to PRT was introduced in the 1993 Finance Act to encourage further investment by allowing the oil companies to keep more of their income. The rate of PRT charged on existing fields was reduced from 75% to 50% with effect from July 1, 1993

and PRT was abolished on fields approved after March 15,1993.

(c) Corporation Tax (CT) : This tax is charged on the profits of oil and gas companies in much the same as any other industry. In the case of new fields, this is now the only tax on profits. The main rate of CT is currently at 30%, one of the lowest company tax rates in the world. Both royalty and PRT are deductible in computing profits for CT purposes, and profits from upstream oil and gas activities are ring-fenced so that they cannot be reduced for CT purposes by any losses or reliefs arising from any other activity, including downstream oil and gas operations.

The tax regime which applies to any particular oil field therefore depends on the date on which it received development consent. Current marginal rates of tax vary between 30% and 69.4% depending on the age of the field in question and its taxable position (though it should be noted that many smaller less profitable fields may pay no PRT even though they are in principle within the PRT provision). The rates are enumerated as follows:

- 69.4% if liable to Royalty, PRT and CT (approved before 1 April, 1982 and in a PRT paying position)
- 38.8% if liable to Royalty and CT (approved before April 1, 1982 and shielded from paying PRT by allowances or other reliefs)
- 65.0% if liable to PRT and CT (approved between April 1, 1982 and March 15, 1993 and in a PRT paying position)

- 30.0% if liable only to CT (approved between April 1, 1982 and March 15, 1993 and shielded from paying PRT by allowances or other reliefs or approved after March 15, 1993)

Other aspects of the UK oil and gas industry that should be mentioned are:

(a) Guidelines for Work Programs

- This is required by the DTI from the oil and gas companies and it is expected to provide comprehensive details of what exploratory and producing activities the company expects to carry out within a specific time frame and the amount of money to be spent.
- Variations to work programs are allowed by DTI

(b) Environmental Legislation

- Environmental legislation affecting/regulating the industry are synchronized with the European Commission laws on the environment.

3.7 Conclusion

It is obvious that the government employs legislative provisions to control its interests and the activities of the operating companies, while engaging in the establishment of focus groups to enhance the development of the industry. The abolition of the royalty is a remarkable incentive for investment in the industry and for boosting the economics of operations in the UK continental shelf. The level of organisational structure exhibited in the UK is obviously more pronounced and intended to provide adequate administrative support to accelerated development of the industry.

CHAPTER 4

REGULATORY AND FISCAL TAXATION MECHANISMS

IN NIGERIA AND THE UNITED KINGDOM

4.1 Exploration and Production

Hydrocarbon oil and gas were first discovered in Nigeria in 1956 and the first oil exported in 1958. Since then the petroleum sector has remained in focus and is the bedrock of the country's economy, thereby requiring the application of strict and changing legislative control.

Regulatory acts, edicts and decrees have been and remain key instruments of government control of key mineral resources, as is the case in every country. Starting from 1958 to the present, governments in Nigeria (whether democratic or military) have consistently promulgated decrees, and passed laws by Acts of Parliament or National Assembly to control the operations of oil companies in the country.

According to Oremade (1986), there are at least thirty pieces of legislation with amendments (since 1958) that the government has employed to control oil companies' operations. (See Appendix 6).

For the purposes of this research, our emphasis will be on the legislation having a direct impact on the economic performance (i.e. financial profitability) of the oil companies. Here an assumption is made that the major reason for, or objective of, the oil companies operating in either UK or Nigeria is profit optimization.

A selection of such legislation will therefore include those affecting:

- Revenue determination and pricing policy
- Royalty and rent payments
- Revenue taxation
- Exchange control and repatriation of profit
- Contractual agreements and choice of share holding structure.

4.2 Federal Inland Revenue Service (FIRS)

The FIRS is the constitutional body, a division of the Federal Ministry of Finance, which is charged with the administration and enforcement of all legislation pertaining to computation, ascertainment and collection of petroleum profit tax. Initially, the body was referred to as the Federal Board of Inland Revenue (Petroleum Division). Its major legislative instruments in carrying out the functions are:

* Petroleum Profit Taxation Act (PPTA), 1959 incorporating the following amendments:

1. Income Tax (Amendment) Decree (No.65) 1966
2. Petroleum Profits Tax (Amendment) Decree (No.1) 1967
3. Petroleum Profits Tax (Amendment) Decree (No.22) 1970
4. Petroleum Profits Tax (Amendment) Decree (No.15) 1973
5. Petroleum Profits Tax (Amendment) Decree (No.55) 1977
6. Petroleum Profits Tax (Amendment) Decree (No.4) 1979
7. Petroleum Profits Tax (Amendment) No.2 Decree (No.24) 1979

8. Petroleum Profits Tax (Amendment) No.3 Decree (No.95) 1979
9. Exemption of Petroleum Operations from Companies Income Tax Act,
10. Companies Income Tax Act 1979 (CITA) Cap 60 1990.

4.3 Other Legislation on Oil and Gas Operations in Nigeria

1. Mineral Oil Acts of 1958

2. Oil Pipeline Acts of 1958, 1965: These make provision for licences to be granted for the establishment and maintenance of pipelines incidental and supplemental to oil fields and oil mining and for the purpose ancillary to such pipelines. The act provides for the right and obligations of the holder of a licence, payment of compensation for economic crops and property damaged, payment of survey fees and other miscellaneous matters.

3. 1979 Constitution, section 40 (3) provides that the entire property of mineral oils and natural gas in, under or upon the territorial waters and the Exclusive Economic Zone of Nigeria shall be vested in the government of Nigeria.

4. Petroleum (Drilling and Production) Regulations of 1969 and 1973 (as amended): Under this act, the entire ownership and control of oil and gas in place within any land in Nigeria, under its territorial waters and continental shelf is vested in the state of Nigeria. The regulation relates to Oil Exploration License (OEL), Oil Prospecting License (OPL) and Oil Mining Leases (OML).

The OEL is a non-exclusive license with a regulation size of 5,000 sq. miles (12,959) sq. km. The OPL confirms the right of surface and sub-surface exploration for petroleum in an area of 100 sq. miles (2,590) sq. km and for an initial period of three years with an option for renewal for two years. The holder of an OPL is entitled to apply for an OML. The OML grants exclusive right to explore, win, produce transport and carry away petroleum from the leased area. The size of an OML is 500 sq. miles (1,295 sq. km).

5. Associated Gas Re-Injection Act 9, 1979: It forbade operating companies to flare associated gas after 1984.

6. Associated Gas Re-Injection Regulations 1984 and Decree No.7 of 1985: On realization of a limited local market for gas, the 1979 act was substituted with 1984 Regulation which permitted flaring but only with the permission of government through the issuance of a certificate to do so in order not to jeopardize oil production. The 1985 decree introduced a penalty for gas flaring.

4.4 Nigeria's Oil and Gas Petroleum Profit Taxation (PPT)

The tax system for oil and gas exploration and production in Nigeria is guided by the Petroleum Profit Tax Act of 1959 as amended at various times. The basic provisions are as summarized below:

Imposition of Tax and Ascertainment of Chargeable Profit

The PPTA provides for tax to be imposed upon assessment, i.e. charged and made payable on the profit from the operation of an oil and gas exploration and producing company on a yearly basis. Revenue is determined as the sum of the posted price and the volume of oil and gas exported from the country, i.e. the sale of chargeable oil and gas.

The revenue on which the chargeable tax is calculated according to section 9 (1) (a) is the exported volume multiplied by the posted price/ freight-on-board (f.o.b.) where posted price is the price published by operating companies and quoted for third parties. When the cost of extraction of that oil/gas, cost of treatment, transportation and storage are deducted from revenue, the balance is the gross profit which attracts imposition of tax. Gross profit, less Section 10 allowable deductions, gives rise to adjusted profit. Adjusted profit, less Section 14 allowable deductions, gives rise to assessable profit. Assessable profit, less Section 15 allowable deductions, gives rise to chargeable profit. According to section 16, subsections 1(a), (b) and (c) the tax rates applicable to chargeable profit for the previous accounting years are:

- (i) 60.78% with effect from October 1, 1974
- (ii) 65.75% with effect from December 1, 1974
- (iii) 85% with effect from April 1, 1975

All of these were legislated through Decree No. 55 of 1977 and took effect retrospectively. A summary of the computation is given on the page 38.

Summary of Nigeria's Petroleum Profit Tax Computations

REVENUE (Posted Price)

↓ Less Production costs etc.

GROSS PROFIT

↓ Less Section 10 Deductions

ADJUSTED PROFIT

↓ Less Section 14 Deductions

ASSESSABLE PROFIT

↓ Less Section 15 Deductions

CHARGEABLE PROFIT

↓ PPT Rate 85%

ASSESSABLE TAX

↓ Less Section 17 Deductions

CHARGEABLE TAX

Assessment and Payment of Tax

Self-assessment of estimated tax is required in advance but not more than two months after the commencement of each accounting period of the operating company. The Federal Inland Revenue Service (FIRS) reserves the right to prescribe additional chargeable tax if the self-assessed tax is deemed to be in error. Chargeable petroleum profit tax is payable in twelve equal monthly instalments together with a final instalment. The final monthly

instalment is the amount of assessed chargeable tax for that accounting year, less the total amount thereof already paid.

The 13th month: where the total tax paid is higher than or lower than the assessed chargeable tax, the difference becomes payable to or by the company in the thirteenth instalment. Between 1971 and 1973, payments of tax instalment were as follows:

1971 – 50% instalment payment as above, 50% in six consecutive monthly instalments;

1972 – 25% instalment payment as above and 75% monthly instalment.

In order to avoid double taxation, sections 52 and 53 make provision for avoidance of double taxation. The amount of tax paid to a foreign country on a portion of the profit (e.g. dividend) for which chargeable tax is being calculated in Nigeria is allowed as a tax credit, which is deductible from the chargeable tax. The amount must however not exceed the foreign taxes payable.

4.5 Memorandum of Understanding (MOU)

Preamble:

The MOU is a document of agreement between the Federal Government of Nigeria and individual Joint Venture operating companies in the country. The purpose of the MOU is to enumerate various incentives that the country has agreed with the individual companies with regards to making their operations profitable under varying conditions. The MOU is a document of incentives for enhancing crude oil and gas reserve addition by encouraging investments in Nigeria's oil and gas exploration and production activities. The MOU signed with individual companies are peculiar to each and differ from company to company.

The Incentives:

Guaranteed Margin: The MOU provides for a minimum margin of \$2.30/bbl after tax to the company for their equity share of the volume of oil/gas produced and sold and \$1.15/bbl for Nigeria's share of equity oil/gas. This is referred to as guaranteed notional margin.

The condition precedent is that the technical cost of operation must be less than or equal to notional fiscal technical cost of \$2.50/bbl.

Guaranteed Margin and Capital Investment: The guaranteed margin is further increased with increased capital investment. For any particular year where the capital investment costs are equal to or exceed \$1.50/bbl on average, the minimum guaranteed notional margin increases to \$2.5/bbl after tax for the company's share of oil/gas produced and \$1.50/bbl for Nigeria's share. In such cases the notional technical cost shall be increased to \$3.50/bbl.

Government Take: This is the sum of all that the government receives financially from each company's operations yearly and it comprises of

- (a) royalty
- (b) petroleum profit tax

The actual value of government take may change depending on the incentives for which the company qualifies. When this happens the new sum of royalty and tax is called the Revised Government Take (RGT).

Revised Government Take (RGT)

Ordinarily, Government Take is based on royalty and petroleum profit tax which are themselves calculated based on the posted price of crude oil i.e. the f.o.b price of crude. The MOU however provides for the calculation of revenue based on Offset Price and Realizable Price. Both of these prices are interrelated using particular formulae as stated below. Realizable Price (RP) is c.i.f price of the crude type sold less the NBV (Net Back Value). NBV is the sum of freight, ocean loss, insurance, processing cost applicable to each primary market and shall not be more than Average Product (Crude Oil) Price for the month and for the stream of agreed crude oil type yield plus or minus 40¢/bbl.

Offset Price is $B \times$ Realizable Price

where B is given as:

$$B = K [(1 - Roy) \times TR + Roy]$$

where K is a factor of 1.0042 whose value depends on the minimum guaranteed margin (M), Roy is the Royalty rate and TR is the applicable tax rate.

The calculation for K is:

$$K = \frac{1.1364 (1 - M + 0.15 FC)}{RP}$$

where RP is realizable price and FC is fiscal technical cost. For example, when M is \$2.30/bbl and RP is < \$23 per bbl.

$$K = \frac{1.1364 [1 - \$2.30 + 0.15 \times \$2.50]}{RP} = 1.0042$$

The application of a self-adjusting K factor is to restore the desired guaranteed notional margin as promised by the government such that, not minding the market price of oil the

company's operations will generate this minimum after tax margin. Now the revised government take (RGT) may be written as:

$$\text{RGT} = \text{OP} - (\text{TR} \times \text{TC}) - \text{OT}$$

where:

OP = Offset Price

Roy = Royalty Rate

TC = Sum of deductions under sections 10, 14 and 15 of PPT Act of 1959

OT = Tax offsets under section 17 of PPT Act of 1959 and as amended.

A company's liability for a particular year, in terms of government take is the lower of the government take calculated based on the posted price/fob price and the revised government take based on the offset pricing formulae.

Additional Tax Credits

Where a company's technical cost exceeds the \$3.50/bbl limit for the accounting year due to capital investment, the company shall be entitled to a tax offset against its tax liability for that year to the tune of:

$$10\% \times (\text{LIBOR} + 1\%) \times (0.8\text{TC}) \times \text{Equity}$$

where LIBOR is the London Inter Bank Fixing Offer Rate and TC is sum of deductions under sections 10, 14 and 15 of PPT Act of 1959

Reserve Addition Bonus

The MOUs provide an incentive for successful exploration activities which adds substantially to Nigeria's hydrocarbon reserve; to the extent that such addition exceeds the total production for that year, the company shall qualify for a reserve addition bonus in the form of an offset against its petroleum profit tax for that year. Reserve addition bonus is calculated using the addition/production ratio (R), the incremental reserve/production ratio (Ra) and the applicable bonus rate.

$$R = \frac{\text{Total Reserve @ Year End} - \text{Total Reserve @ Beginning of Year}}{\text{Total Production for the Year}}$$

$$Ra = R - 1.0$$

$$\begin{aligned} \text{E.g. if } R = 1.5, \text{ then } Ra &= 1.5 - 1 \\ &= 0.5 \end{aligned}$$

For 1st Ra = 0.25 applicable bonus rate is \$0.10 (X1)

2nd Ra up to another 0.25 bonus rate is \$0.25 (X2)

3rd Ra up to another 0.25 bonus rate is \$0.40 (X3)

4th Ra up to another 0.25 bonus rate is \$0.50 (X4)

$$\begin{aligned} \text{Total Reserve Addition Bonus} &= \{Ra_1 \times X_1 + Ra_2 \times X_2 + Ra_3 \times X_3 \\ &\quad + Ra_4 \times X_4\} P \times \text{Equity} \end{aligned}$$

4.6 UK Oil and Gas Regulatory Legislation

1. **Petroleum (Production) Act 1934:** This Act established national ownership for the UK on all petroleum oil and gas existing in the country and empowered the government to manage and regulate it.

2. **Continental Shelf Act 1964:** Together with the Geneva Convention on the Law of the Sea (1958) this act established the sovereign right of countries to undertake exploration and production of the natural resources of their continental shelves to a distance of 200 miles from shore. This act divides the UK Continental Shelf (UKCS) into quadrants and blocks and enabled the first offshore Licensing Round in 1964. Each quadrant is 1° of longitude by 1° of latitude and is divided into 30 blocks. Onshore license areas are based on the Ordnance Survey 10km by 10km grid.

3. **Petroleum and Submarine Pipeline Act 1975:** This act established the British National Oil Company (BNOC). In 1982 BNOC's shares were transferred to Britoil plc, and the shares sold to the public in 1982 and 1985.

4. **Petroleum Act 1998:** This consolidates the three earlier pieces of legislation.

5. **Oil Exploration Licence (OEL):** Initially held for three years, this licence allows exploration activity in the granted block for three years and can be extended for another three years.

6. **Production Licence:** This is an oil mining licence which allows the owner to explore, win and transport and sell oil and gas from the block for which it is awarded. Depending on the terms and conditions, it can be held for an initial six years after which the licensees are required to relinquish 50% of the licensed area. The licence also has a second term of 12 years extendable by a further 18 years subject to approval both 5 and 6 above relate to offshore fields.

7. **Petroleum Production (Landward Areas) Regulations Act 1995:** This act covers the major processes involved in the petroleum exploration and development licence (PEDL) for inward blocks and has the same terms and conditions as the offshore production licence.

8. **The Supplementary Seismic Survey Licence (SSSL):** This allows the holder to extend a seismic survey into unlicensed acreages.

4.7 UK Oil and Gas Taxation / Fiscal Regime

The fiscal regime for UK petroleum (upstream sector) industry has remained unchanged since 1983 apart from the review of 1998. Government revenue from UKCS oil and gas production is made up of payments of royalty, petroleum revenue tax (PRT) and corporation tax (CT). The royalty is a charge on the value of oil and gas won. It does not apply where development consent was given after 1 April 1982 except for onshore fields and fields in the southern basin. The royalty is chargeable for those fields if development consent was given before July 1, 1988.

PRT is a tax with rules especially reflecting the particular nature of the oil industry and is essentially a windfall tax on the revenue from winning oil and gas in the UK or UKCS. It is only applicable, however, to fields which were given development consent before March 1993.

Corporation tax is the main tax on business profits in the UK, but there are additional constraining rules for UKCS income. Some other tax developments include:

- 1997/1998 North Sea Fiscal Review: no change was effected in the fiscal regime.
- Finance Act 1999: oil licences are qualifying assets for the purposes of rollover relief, so that the tax can be deferred if proceeds are reinvested.

Other details of the tax/fiscal regime form the body of our next discussion under royalty, petroleum revenue tax and corporation tax.

Royalty Payments

In computing both petroleum revenue tax and corporation tax, the royalty is a deductible item. It is therefore payable on field production and at the prescribed rates. In the UK, the royalty payment is not applicable to all fields as is the case in some countries. This could be a major difference with what obtains in Nigeria where the royalty is payable on all oil fields production. The royalty payment is calculated on 12½% of the landed value of oil and gas produced less the cost of processing and transportation to storage.

Abolition of royalty payments

Payment of royalty was abolished for all new fields, that is, for all fields whose approval for development or production license was first given after April 1, 1982 for UKCS and if the licence was given after July 1, 1988 for Southern Basin or onshore fields. From January 1, 2003, the royalty was abolished for all fields in the UKCS a move seen in the industry as a welcome incentive for attracting investment capital.

Petroleum Revenue Tax (PRT)

In the UK, not all production fields are assessable for petroleum revenue tax. PRT is payable on all fields with licences before March 16, 1993. These are referred to as taxable fields and there are only 75 such fields still in production in the UKCS. Since 1993 the PRT rate has been 50% and applicable twice yearly in July and December. PRT forms part of the overall corporation tax payable by those fields qualifying to pay PRT i.e. for them PRT is deductible from corporation tax.

Where a field records a loss for a particular year, PRT is charged to the corporation tax for that year. Hence PRT paying fields do not become effectively PRT paying until their investment payback is achieved.

Typical PRT Computation

PRT is based on the value of the share of production to the joint venture participant i.e. where the share of gross profit after payback is reached. The following is a summary of the computation format, while an example calculation follow on page 49.

	<u>£</u>	<u>£</u>
Gross profit/ (loss)		x
Add		
Tariff receipts (less allowance)	x	
Asset disposal receipts	x	
Royalty and licence debit/ (credit)	x	
		X
Less		
Provisional expenditure allowance net of reversals	x	
Share of joint field expenditure	x	
Participant's own field expenditure	x	
Uplift	x	
Exploration and appraisal expenditure	x	
Cross-field allowance	x	
Research expenditure	x	
Losses from abandoned wells	x	
Total		(x)
Assessable profit/ (allowable loss)		x
Loss relief		(x)
Oil allowance		(x)
Taxable profit/ (loss)		
Tax at 50 %(subject to safeguard)		x

Example PRT Computation

	<u>£'000</u>	<u>£'000</u>
Gross profit/ (loss)		95000
Add		
Tariff receipts (less allowance)	3000	
Asset disposal receipts	8500	
Royalty & license debit/ (credit)	<u>2540</u>	
	14040	109040
Less		
Provisional expenditure allowance net of reversals	7500	
Share of joint field expenditure	5500	
Participants' own field expenditure	42500	
Uplift	3750	
Exploration & appraisal expenditure	25000	
Cross-field allowance	4500	
Research expenditure	1500	
Losses from abandoned wells	2750	
Total		(93000)
Assessable profit/ (allowable loss)		16040
Loss relief	(1150)	
Oil allowance	(1750)	
Taxable profit/ (loss)		13140
Tax at 50 % (subject to safeguard)		<u>6570</u>

4.8 Key Issues (Provisions) in UK Petroleum Revenue Tax

- 1. Provision of uplift:** This is a supplementary allowance of 35% on certain capital expenditure incurred on bringing a field into production apart from main capital expenditure.
- 2. Field Operations Loss Relief:** This is a tax relief for losses as carry forward.
- 3. Exemption from PRT until payback is reached.**
- 4. Cross field allowance:** This allows a participant to offset up to 10% of development costs in a new field from the profits of another taxable or PRT paying field.
- 5. Oil Allowance:** This is a relief created to reduce the effective PRT rate payable on qualifying fields. It is the cash value of the equivalent of 500,000 tonnes of oil per field per year. The aggregate oil allowance for 10 years is 10 million tonnes. However in using this allowance, the participator cannot use it to create a tax loss though it is possible to carry it forward.
- 6. Safeguard Rule:** This is a provision for the less profitable marginal fields. It is not a deduction from PRT payable but usually calculated on its own formulation.

Where the safeguard figure calculated is less than the PRT, the safeguard amount is paid as PRT payable for the period. The safeguard is calculated from adjusted profit which in itself is calculated as the sum of assessable profit, non-field expenditure claimed back, expenditure qualifying for uplift (i.e. capital expenditure on assets

used to bring oil to production which enjoy 35% allowance for deduction from gross profit for PRT calculations).

If adjusted profit is $< 30\%$ of capital expense then $PRT = 0$

If adjusted profit is $> 30\%$ of capital expense then $PRT \leq 80\%$ of the difference between adjusted profit minus 30% of capital expense. This is what is referred to as a Safeguard and Tapering Provision.

7. Payment of PRT: Payment is assessed twice yearly, January to June and July to December. Payment is also made on account and on six monthly instalments for each half year period. Payments are self-assessed (provisional PRT) and each instalment is calculated as one-eighth of the total payment for the chargeable period in view. Payment is due, that is, it commences two months after the end of the chargeable period. Expenditure is deducted on a 'claimed' basis and where not allowed when assessed by the Inland Revenue, any balance becomes payable or refundable.

4.9 UK Corporation Tax and Ring-Fenced Activity

In the UK, oil companies pay corporation tax just like other companies. In addition, where such an oil company has other lines of business e.g. petroleum products marketing, the oil and gas extraction business is treated as separate. This is what is referred to as 'ring fencing'.

Under the ring fence rule, there is provision for set-off of losses of operations within the ring fence i.e. from oil and gas operation from non-ring-fenced income. It is, however, not

allowed to offset losses from non-ring fenced business with ring-fence income. Losses, subject to the ring-fence rule may be carried forward and deducted from future profit or carried back to the previous year's profit. For companies having overseas operations, such oil and gas operations are outside the ring fence. For fields that are PRT paying, PRT is deductible in arriving at the taxable income for corporation tax purposes.

However, corporation tax is not assessable on a field basis but on the entire company chargeable profit, hence its provisions affect both PRT paying and non-PRT paying fields.

Starting from April 1, 1999 the tax rate is 30%. There is also the provision for small profit making fields whereby the tax rate is either 20% or 10% depending on the size of profit.

Illustration of Corporation Tax Computation for Ring-Fence Activity

	£	£
Profit /Loss per accounts		x
Add:		
Pricing adjustment (if any)	x	
Book depreciation	x	
Disallowable expenditure (e.g. entertainment)	x	
Capital costs expensed	x	
Provisions for future costs	x	
Payable under loan relationships	x	
		x

Less:

PRT and royalty	x	
Capital gains	x	
Interest received	x	
Capital allowances	x	
Receivable under loan relationships	x	
Trading losses of other periods	x	
		(x)
Taxable ring-fence trading income		x
Capital gains		x
Interest (other businesses)		(x)
Taxable profits (subject to group relief)		x

See example calculation below.

Example Corporation Tax Computation for Ring-fenced Activity

	<u>£'000</u>	<u>£'000</u>
Profit /Loss per accounts		750,000
Add:		
Pricing adjustment (if any)	500	
Book depreciation	40,000	
Disallowable expenditure (e.g. entertainment)	150	

Capital costs expensed	38,500	
Provisions for future costs	50,000	
Payable under loan relationships	<u>65,000</u>	
	194,150	
		555,850
Less:		
PRT and royalty	129,950	
Capital gains	10,000	
Interest received	8,500	
Capital allowances	17,850	
Receivable under loan relationships	4,500	
Trading losses of other periods	0	
		(170,800)
Taxable ring-fence trading income		385,050
Capital gains		12,500
Interest (other businesses)		(42,950)
Taxable profits (subject to group relief)		354,600
Corporation Tax at 30% (Assume no group relief)		<u>106,380</u>
Profit After Tax		<u>248,220</u>

4.10 Other Key Provisions Affecting the Computation of Corporate Tax

- 1. Mineral Extraction Allowances (MEA):** This is a provision according to which the costs of acquiring mineral assets e.g. the original licence premium, be relieved by 10% while pre-trading expenditure on mineral exploration and access be relieved by 25%.
- 2. Scientific Research Allowance (SRA):** This includes the costs of seismic work and exploration in the UK or on the UKCS if incurred before the commencement date of commercial production in that field. A 100% write-off as incurred is allowed except for claw back of the SRA when the asset representing the research equipment is disposed off.
- 3. Abandonment Allowance:** This is a provision for capital costs when a field is abandoned. Though to date very few fields (and small fields) have been abandoned in the UK, and most of them are production equipments linked to other fields i.e. shared facilities. The first major installation for abandonment is expected to be the Phillips operated Maureen platform. There is a 100% allowance under the capital allowance provision that is applicable for abandonment if a company decides to use it against the ring fenced profits. The deduction must however be made within two years after the expenditure is incurred. A qualifying expenditure must relate to the demolition of an oil installation or to the costs associated with preparing these facilities for re-use.

Whenever a loss results from abandonment it can be set off against the profits of the trade in the last three years. Also abandonment costs incurred after three years of closure of the field activities, are 100% allowable as capital allowance from its final trading account.

4. Date of Commencement of Trade and Capital Allowance: This is an important date in that it is regarded as when a calculation of corporation tax liability begins. This date is when a company begins commercial production from a particular field. Revenue expenditure incurred from the last seven years before the commencement date qualifies for corporation tax relief while the qualifying expenditure within that period also triggers capital allowances.

4.11 Conclusion

The mechanics of fiscal taxation show that not only does the UK government tax oil and gas exploitation from the revenue yield but ensures that its profits are ring-fenced from the companies' other operations. This provides a maximization of tax revenue from petroleum exploitation, and avoids any possibility of profit dilution by the results of other operations.

In the case of Nigeria, only the profits are taxed without any ring-fencing. The complexity of field accounting and therefore field taxation in the UK may be rather difficult for the Nigerian supervisory agencies to administer for the likely reasons of inefficient tax administration. The system of computing the petroleum profit tax in Nigeria is also noticeably complex and may encourage tax evasion if the supervisors themselves are unable to exhibit sufficient mastery.

CHAPTER 5

LITERATURE REVIEW I : FISCAL TAXATION AS AN INSTRUMENT OF GOVERNMENT CONTROL

5.1 Background

Since ancient days, the issues surrounding ownership, access to, permission to extract and payment of rents for extraction of natural resources have always been important to both owners of such resources and those interested in extracting them, the entrepreneurs or investors. Today, these same issues are as important as in those days. Indeed, they tend to be more important now than in the past given that society has grown to become less independent of such naturally occurring resources like the one in question in this study- the hydrocarbon resource of petroleum oil and gas.

State sovereignty and right over natural resources in countries endowed with them have always moved the country to control the exploitation using various instruments of control. Similarly, investors who are interested in the business of extracting mineral resources also seek the resource in order to add to their assets and improve on their profit levels. In particular, the need to acquire more oil and gas resources (in terms of adding reservoir assets to their balance sheet) drives most of the oil companies to the ends of the world in search of these all important resources.

Given the irreplaceability of most naturally occurring mineral resources, particularly oil and gas, and the need to secure their judicious exploitation as well as revenue accruable to

nation states, most governments of oil and gas producing nations enter into different contractual agreements with petroleum companies.

Also, it is known that for various reasons, which this study tries to elucidate in this literature review, the choice of contractual agreement affects the operations of the exploration and producing companies involved. The various laws and regulations, the evolution of the agreements and the choice of corporate structure, all affect the operations and therefore the economics of the companies formed or licensed to explore and produce the hydrocarbon resources.

Fiscal taxation as a form of government control mechanism often leads to distortions. Such distortionary impacts of government fiscal policies lead to 'excess burden' which is a loss of welfare for either individuals or corporate organizations. This study examines the incidence of petroleum taxation on the oil companies, not necessarily to determine its efficiency as it can be argued that taxes which generate excess burden are not in themselves bad, as they can be employed to achieve other purposes. e.g. fairness or equalization in the distribution of wealth. There may not be a flawless single, feasible way or indicator to fully capture the magnitude of government's fiscal policy impact on the economy, but there is always the need to investigate its impact on sectors of the economy.

This study is part of the evaluative duties of citizens and organizations (including academia) in order to measure the appropriateness and / or the extent of government control (using fiscal taxation) in determining the economic activities within a particular sector in the country. Without this type of investigative research, knowledge of the impact of such

government fiscal policies (taxation of petroleum resources) on the operating companies will not be definitive but only left to guessing.

5.2 Fiscal Taxation – A Form of Government Control

The review of literature in this chapter is intended to highlight the historical developments of the factors affecting oil and gas exploration and producing business in Nigeria. The review ranges from 1960, the year of Nigeria's independence from the UK, to the current available literature in academia and commercial / industrial archives.

Given the recognition of corporate governance as an important tool in measuring the effectiveness of corporate organizations in meeting the objectives of various stakeholders, we also examined the literature on the role of corporate governance in the economic performance of the oil companies operating in Nigeria from the perspective of the separation of ownership and control. This literature is reviewed in chapter 5, and covers the wider context of existing perspectives in corporate governance - ownership structure and economic performance in particular.

5.3 Government Control Objectives and Natural Resources Taxation

Why do governments all over try to control national natural resources? According to the studies on Mexico (Katz, 1972) and Ecuador (Tanzi, 1969), there are very many reasons, which have been shown to be responsible for this tendency.

These include:

- 1. Natural resources are regarded as belonging to the entire country, so central control prevents sectional claims to ownership.**
- 2. Natural resources are sometimes non-renewable, so they require efficient management that will maximise their exploitation and utilisation.**
- 3. In some countries, such resources are the sole sources of national revenue.**
- 4. For security and strategic reasons of supply.**

Whatever the reasons, a key objective is to retain control of what generates a substantial part of the gross national product or a significant part of national tax income.

To achieve this, a number of regulations and policies are passed into law, which make for the charging of rents for the exploitation of these resources and the imposition of tax for their operations. Similarly, governments offer incentives that will boost investments in the resource exploitation.

As we will see later, these incentives and rent generation schemes constitute what we refer to as fiscal regimes/policies that govern the exploration and production of natural resources, like hydrocarbon oil and gas. If government control can result in income generation, then of course such actions of the state will be tantamount to an economic activity. As such we can then safely expect the actions to affect the economic performance of companies operating in the country.

5.4 Fiscal Policy Defined

Going by definition, fiscal policy is the government's attempt to influence aggregate demand in the economy through regulation of public expenditure as well as stimulation of revenue through taxes. It is the framework of taxes and expenditure that can generate or lead to a deficit, surplus or balanced budget.

In this study of fiscal taxation as a form of government control mechanism, the consideration is not in terms of its effects on the equilibrium national income. Neither is it in terms of the inflationary/expansionary or deflationary influence of tax rates and level of money supply on the economies of Nigeria or the public sector. Also, it is not about Public Sector Net Debt, Public Sector Net Borrowing, or the sustainability of fiscal policy. Rather, it is to consider the impact of fiscal taxes, or rather government's tax take, on the economic performance of the oil companies operating in Nigeria.

If according to Hardwick et al (1999), in their definition of fiscal policy, government attempts to influence aggregate demand through regulation of public expenditure and rates of taxation, then we will be looking at tax rates in the oil and gas exploration and producing industry and how they have affected the companies' economic performance over time.

Ricardo (1817) summarized the effects of taxation in terms of lessening the power to accumulate because all taxes either fall on capital or revenue. If they fall on capital, taxes diminish the fund available for the productive industry of the country and if on revenue, they reduce accumulation or force contributors to save the amount of tax by diminishing their unproductive consumption of luxuries to the tune of the tax.

These summed up, the investigation has to do with the effect of taxation on investment returns and therefore, on economic performance. Whenever the government decides to raise revenue through taxation, it affects every aspect of the economy either directly or indirectly. This is what classical economists recognized and Milward (1998) epitomized in the classical theory of Adam Smith (1776) proposed four canons of taxation:

- i. Equity – fairness with respect to individuals' contribution in proportion to abilities
- ii. Certainty – clear knowledge of payment in terms of timing
- iii. Convenience – of payment in terms of timing
- iv. Efficiency – minimization of the cost of collection as a proportion of total revenue realisable and of distortionary efforts on the behaviour of tax payers.

For the governments of different nations, experience differs in relation to the four canons above, e.g. the efficiency of tax collection may be an issue with a developing nation like Nigeria while this is not the case with the United Kingdom. Poor efficiency of tax collection may negate or minimize the very reason for the imposition of tax and may also be an incentive to push up certain tax rates in order to generate a target level of revenue through tax.

5.5 Government Control and Fiscal Policy

Fiscal policy is arguably a controversial tool in the management of macroeconomics. Though potent when viewed from the perspective of finance and economics, it could be politically and socially sensitive. It has both advantages and disadvantages. For example, its effect is positive during depressions/recessions, while it could also lead to inflation

during a deficit. For the purpose of this study, emphasis will be on taxes and their impact on economic performance.

Generally, the imposition of tax reduces private consumption and savings. When after-tax income is reduced, the disposable income is then split between consumption and savings. When consumption is reduced, aggregate demand also falls, and if savings are reduced, then interest rates may rise causing investment to fall. The desirability of these events depends on the prevailing economic conditions. (Taxes of different sorts tend to affect consumption and savings differently).

Usually, favourable tax regimes are required to stimulate investments in risky ventures. Where such incentives are absent, there is a disincentive for investment in high-risk projects. However, when losses can be offset against high-risk and unsuccessful investments, it is unlikely that the aggregate amount invested in the economy will reduce.

To stimulate investments, the provision of tax incentives such as tax credits, capital allowances etc. reduce tax liabilities and increase business profitability. With this, there is the likelihood of larger amounts of net profits being available for reinvestment and stimulation of the macro-economy. According to Wolf (1966) taxes do not stimulate the economy, though the extent to which they depress it is not exactly known. During a depression, when consumption is low, if taxes are imposed on savings, there is a disincentive to save which stimulates the economy given that it is expenditure that actually stimulates the economy.

The effect of fiscal policy on the macro economy no doubt affects business organisations either in terms of the net effect of taxes and expenditure resulting in a deficit (and as such a stimulant to the economy) or resulting in a surplus (due to raising taxes/cutting expenditure). Business economic performance is usually tied to the level of success or failure of capital projects particularly in industries with high project costs. This is in turn associated with the impact of taxation on investment projects. The value of capital projects, however, may be distorted by the prevailing tax system, and for most countries the tax system is neutral and may be characterised by:

- a. a system that allows free depreciation and with no interest deductible
- b. a system where true economic depreciation in line with economic wear and tear is allowed for the purposes of taxation and accompanied with interest element deductions.

Where it happens that the fiscal policy deviates from such a definition of tax neutrality, e.g. the denial of interest element deduction for tax purposes even while depreciation is economic, or when tax rebates on losses are not immediate, then there is no tax neutrality.

In the UK, immediate tax rebates are allowed only if:

- a. other incomes arise within the same accounting year
- b. there is income from the immediate preceding year from which to offset the losses.

The UK tax system cannot therefore be said to be neutral as implied above.

Where there is deviation from tax neutrality, it is obvious that the company will carry taxable losses for the foreseeable future and this will affect economic performance, more so, as the present value of the tax rebate and tax liabilities for the project(s) will be lowered, as they can only become effective at a future date.

According to (Hodgkinson, 1989), where interest is tax deductible, projects financed by debt become more attractive than equity-financed projects when the company's operations

are in a tax-paying position. Gilles et al (1987) lists the objectives of fiscal policy as the promotion of economic growth, the reduction of income disparities between households and regions, the promotion of economic stability and economic efficiency, and the increasing of host-country returns from natural resource endowments.

Government behaviour or the 'public choice' approach (Mueller, 1989) is part of public finance and has been subjected to economic analysis. For both developed and developing economies, there is little question that there is scepticism in the minds of analysts with respect to the post-war view that government always act in the best interest of its citizens, as posited by Russell and Nicholson (1981). Similarly, as it is reasonable from the works of Adam Smith and the English classical economists that 'government is best that governs least' so we see disparities in the extent of the government's direct investment in enterprises, particularly in such sectors considered to be strategic, e.g. government control and/or involvement in the petroleum industry of developed and developing economies, like that of the UK and Nigeria respectively. Such government behaviour is a kind of control.

In taxation, as in other areas of fiscal policy studies, views will be divergent as usual, e.g. acceptance of the need for, or the appropriateness of state ownership of, companies in the private sector and the trade-off between growth and equity structure. Should there be no definitive conclusion from this study, the discoveries from this research are expected to stimulate further research on the impact of fiscal taxation (as part of the government control mechanism) on economic performance of oil and gas exploration and producing companies operating in a developing economy, (Bird and Oldman 1990).

5.6 Tax Incentives as Part of Fiscal Policy

Tax schemes or regimes have often been used by countries of both developed and developing economies to either promote national revenue generation or foreign / local investments, where they act as incentives.

There is also the political economic aspect of incentive policy. A country's tax structure inevitably reflects more than its economic structure. It involves its political set up and a balance of prevailing political and economic forces as well as national administration capacity to enforce such tax system. According to Bird and Oldman (1990), such fiscal incentives fall into four types though all are forms of subsidy which governments of mixed economies use to induce foreign capital inflows for their economic growth or the development of particular industries. The four categories are:

- (a) Where the subsidy is independent of the level of investment, but conditional on a maximum level of profit, e.g. a tax holiday.
- (b) Where the subsidy is dependent on the level of investment and on a minimum level of profit, e.g. accelerated depreciation allowance, tax credit, investment allowances and development rebates. This allows a further percentage / portion of the asset's cost as tax deductibles from taxable income on top of the depreciation provision already deducted on either the straight line or reducing balance method.
- (c) Where the subsidy is independent of the level of investment and the minimum level of profit, e.g. import duty exemption on capital goods for the company's operations and / or on raw materials.

(d) Where the subsidy is dependent on the level of investment, and not on a minimum profit level, e.g. an investment grant, whereby a portion of the company's investment cost is paid by the government, (Shah and Toye, 1978).

In practice, Heller and Kauffman, (1963) noticed that one of each of the four subsidy types is not an alternative for the other. Rather, many countries (for example, 10 out of the 28 surveyed in their study) operated more than one of the four types simultaneously, or one type after another in the life of the investment or the company.

Summary of Fiscal Incentive Types and Implications for Profits and Public Finance

	<u>(A) $J^0 > J^*$</u>	<u>(B) $J^0 \leq J^*$</u>
(1) $S \neq f(K^0)$	Tax holiday Tax deductible Loan interest	Import duty exemption
(2) $S = f(K^0)$	Tax credit Investment allowance Accelerated depreciation	Investment grant

Notes: S is the amount of public subsidy; K^0 is the cost of acquiring investment goods; J^ is the level of corporate profits at which tax becomes payable; J^0 is pre-tax profits.*

Such subsidies affect profitability depending on when the exact benefit (timing) is, vis-à-vis the present value of alternative forms of subsidy.

Further work by Heller and Kauffman (1963) summarizes the existing literature on fiscal incentives in 28 developing countries including Nigeria. No less than eighteen of the twenty-eight were former British colonies.

The most popular subsidy type is (a) above i.e the tax holiday, with 93% of the countries (including Nigeria) offering one type of tax holiday or another. 16% of the countries employed accelerated investment depreciation ((b) above) so this was the second most widely used next to (a). The import duty exemption was preferred next by 36% of the countries, while the investment grant type of incentive was preferred by only one country, Fiji.

The impacts of the incentives were assessed based on the percentage share of investment in Gross National Product (GNP) before and after the incentives were introduced. Given that other factors could cause the investment share of GNP to change, this method needs no further examination.

Another approach in investigating the economic impact of incentives is through the use of questionnaires, which are known to have inherent biases that can invalidate the outcome of the study. As in the previous approach, the survey/questionnaire method assumes that investment behaviour is the only variable with which we can measure the impact of fiscal incentives. More so, the method does not distinguish between categories of investment and investors or between capital intensive and labour intensive enterprises. Worse still, respondents will always wish for more fiscal incentives thereby blurring the time impact of existing incentives in their responses. This bias in investors may be offset by the overstatement of the actual impact of such incentives, such that an impression of low impact is not given thereby prompting the government to cancel the incentives altogether, if considered to be of low effect. This approach was used in the following studies about the impact of fiscal incentives on the countries' economies.

Mexico (Ross and Christensen 1959)

Jamaica (Chen –Young, 1967)

Pakistan (Aghar and Sharif, 1974)

Brazil (Gooman, 1972)

Nigeria (Olaoku, 1976)

A more realistic/statistical and quantitative method of measuring the effectiveness of fiscal incentives is the examination of the published financial results of firms whose operations have enjoyed fiscal incentives as against those that did not, or of the same company using the financial results before and after the introduction of incentives. The findings of the studies mentioned above are:

- 1. That these countries' tax bases are themselves so little that tax incentives (subsidies) have little effect on the economy. And even where the tax base is significant, the countries have little success in collecting taxes.**
- 2. That the developing countries apply fiscal incentives to attract investment capital from multinational companies and therefore create competition among them which further reduces their revenues, thereby making nonsense of the impact of the incentives on their economies.**
- 3. That the incentives are as a result of internal political pressure on governments by the multinationals and their capitalist supporters in various governments of the developing countries.**

Whatever the argument is about, the methods highlighted above and the impact on the national economies, fiscal incentives do one thing: they improve the rate of return of

investment projects and therefore the companies' economic performance in countries where there are subsidies.

This is one of the spurs for this research: to find out whether and how fiscal incentives or their absence / reduction through fiscal taxation determine the level of profitability for the oil companies operating in Nigeria.

5.7 Principal Characteristics of a Tax System

According to Smith (1776) in his classic publication 'The Wealth of Nations', four major characteristics are desirable in a wholesome tax system. These are as follows:

(a) The subjects of every state ought to contribute to the support of the government, in proportion to their respective abilities; that is in proportion to the revenue which they respectively enjoy under the protection of the state.

(b) The tax which each individual is bound to pay ought to be certain, and not arbitrary.

(c) Every tax ought to be levied at the time, or in the manner, most convenient for the contributor to pay.

(d) Every tax ought to be contrived as both to take out, and keep out of the pockets of the people, as little as possible over and above what it brings in to the public treasury of the state. A tax may either take out or keep out of the pockets of the people a great deal more than it brings into the public treasury, and in four ways:

- i. by the number of officers who levy it
- ii. by obstructing the industry of the people
- iii. by penalties incurred in attempting to evade the tax

iv. by subjecting the people to frequent visits and examinations of the tax-gatherer

These are referred to as the 'Canons of Taxation' in classical literature.

According to Lymer et al (2003), in modern tax literature, the canons are restated as:

i. Equity: a tax should be seen as fair in its impact on all and levied according to people's ability to pay.

ii. Certainty: taxes should not be arbitrary, i.e. tax payers should know their tax liability (including the simplicity of understanding), and when and where to pay.

iii. Convenience: it should be easy for the tax payer to pay up.

iv. Efficiency: the tax system should not have an impact on the allocation of resources and it should be cheap to run.

Another addition to these is that a tax system should be flexible in order to cope with changing economic situations, without requiring significant changes. It is not usual to have all of these characteristics included in every tax system. Where they occur, it is unlikely that they have equal weight in their impacts on the economy. For example, for an efficient tax system, it is expected that it does not distort the economic decisions made by individuals or companies, although governments sometimes change a tax system for behavioural change purposes, in what is regarded as a 'corrective tax'.

5.8 National Tax Income Maximization

It is usual to have objectives for tax policies whenever they exist. It could be to stimulate the generation of the provision of certain goods and services, or to minimize the production of some other goods and services. When tax rates fall, it could generate consumption of particular goods and services and reduce consumption of some other goods and services. Similarly, governments may set an objective for tax policies such that foreign investment is attracted or national tax income is maximized. The list of such objectives is on-going.

With regards to multinational corporations whose activities span several countries, foreign sourced corporate income is affected by the tax policies of both home and foreign countries. Given that national corporate income can be safely defined as the aggregate of domestic income before tax (both tax and retained profit still belong to entities – government and company, within the borders of the country), and foreign sourced or repatriated income after foreign taxes are paid, the level of tax in foreign countries therefore affects the portion of repatriated after tax income and therefore, the national tax income.

For countries with tax policies that avoid double taxation, e.g. the UK and the USA, the return on investment in foreign countries will take into account the impact of such foreign tax rates, and compare them to the home country's rates and returns on investment, before deciding on the allocation of capital to foreign investment, i.e. where to invest.

5.9 Corporation Tax

Most countries impose tax on corporations or companies for a number of reasons, the most important of which are the following:

- (a) Corporation tax is regarded as a benefit tax, which companies pay, for enjoying the use of public utilities and services that contribute to the attainment or improvement of their profits.
- (b) It is a withholding tax, which serves as a backstop to the personal tax.
- (c) The corporate tax captures the rents earned by the owners of fixed factors i.e. non-reproductive factors like entrepreneurship, natural resources, land etc.
- (d) To raise revenue for the government.

Giving the rationale for withholding tax on corporate retentions, Mintz (1995), explained that the tax base can be summed up as:

$$Y = R - C - \text{Dep} - I - \text{Div}$$

where:

Y = Taxable income

R = Revenue

C = Cost of operations

Dep = Depreciation

I = Interest element

Div = Dividend payment

Because dividends are not allowable deductions, the corporate tax base then becomes:

$$Y = R - C - \text{Dep} - I$$

In (c) above, when government taxes rent, even if the government does not own the land/property, the tax is a charge for the use of the land/property and it is referred to as royalty payment for the use of the land. This was first highlighted by George (1879) and later expounded in the optimal tax literature by Atkinson and Stiglitz (1980)

5.10 Corporate Taxes and Financing Risks

Corporate taxes may affect financing decisions as investment may be funded by debt where the interest element is tax deductible or non-deductible. To say the least, any investment is risky. Because of the likely impact of taxation, investors or corporations usually project the after-tax returns on investment. Given that these returns cannot be guaranteed, there is an element of risk involved. The way investors view projected returns is usually affected by taxes or tax regimes in the countries of operation. It is therefore usual to assess the degree or level of risk associated with taxes.

Similar works were carried out by Mintz (1982), Gordon (1985) and Gordon and Wilson (1991) in which they surveyed a series of countries and their tax policies in relation to companies' investment capital inflow. It was discovered that countries with more favourable tax regimes had higher levels of capital inflow. Investors weigh a number of risk elements (with the risk premium associated) and the tax regimes of different countries as this affects their after-tax rate of returns, e.g. how does a particular government treat losses when incurred in operations? If the income tax provides for full recovery, i.e. full-loss-offset or not, this affects the after tax returns for similar operations in another country compared.

5.11 The Disincentive of Taxation

Whenever tax is imposed or tax rates increased, the effect could be on consumption patterns as the consumption of one set of commodities or services is substituted for another set, as a result of lower disposable income. Similarly, there is the effect of creating a shift from aggregate disposable income to government revenue from taxation. This situation could result in a tax disincentive, whereby there is a disincentive to work or earn higher income, particularly with progressive income tax system.

It is known that there are difficulties in integrating tax efficiency and tax equity, particularly as they affect income tax policies. According to James and Nobes, (2000), the main difficulty is the trade-off which often exists between tax efficiency and tax incentives on the one hand and equity on the other hand. They concluded that society may consider a highly progressive income tax to be equitable, but that such a tax system might damage the incentive to work. The problem therefore, is to find the tax rates that give the best trade-off between incentives and equity. The failure of a tax system to achieve this could result in a tax disincentive.

With respect to the taxation of enterprise or companies, similar difficulties are experienced too. According to Perman et al (1996), the imposition of a tax or subsidy on a non-renewable natural resource like oil and gas, affects the resource extraction cost. The imposition of a revenue or profit tax is said to be equivalent to an increase in the resource extraction cost, while an incentive like a revenue subsidy scheme is equivalent to a decrease in the resource extraction cost. It is also believed that a decrease in extraction costs could lower the market price of the resource, when left to free market forces, and

possibly shorten the time to completely exhaust the stock or reserve of the natural resource. In the case of oil and gas exploration and production, incentives will likely increase extraction investment capital commitment by the international oil companies, and the host country's production capacity. This would in effect, enable the production capacity of an OPEC member state like Nigeria to secure an additional production quota, given that production quotas are based on reserves. The resultant effect therefore, is that such reserves are depleted or exhausted faster according to Perman et al, (1996). Conversely, if taxes are imposed or tax rates increased, production costs are likely to increase thereby reducing the economic performance of the companies. Such tax policies tend to reduce investment capital commitment by the international oil companies and hence lead to an eventual reduction in the depletion rate of oil and gas reserves. This is therefore a clear case of the disincentive effect of imposition of higher tax rates.

For most developing countries, including OPEC member states, there is a preference for the imposition of high tax rates in order to generate higher revenue. However, the reduction of capital investment tends to reduce the rate at which new reserves are added, and which in turn reduces the allocated production quotas, and leads to a reduction in oil and gas volumes available in the market. This forces the price of oil and gas to increase, a situation preferred by OPEC member states.

5.12 The Development of Government Control of Petroleum Resources in Nigeria and the UK through Fiscal Taxation

The involvement of international oil companies in the exploration and production of hydrocarbon resources in different parts of the world have always characterized the history

of petroleum resources exploitation. On the part of the international oil companies, there are usually uncertainties about the commercial availability of the resource that will justify their investment as well as uncertainty about the host country's government's political and economic stability.

In the North Sea, the history of the oil industry suggests that both the governments and the international oil companies were going through a learning process, with the UK and Norwegian governments learning the microeconomics of the industry, and how it affects the macroeconomics of their countries, while the international oil companies learnt the differences in operating in the UK or Norway, compared to other previous areas of experience.

In his book on the development of the UK and the Norwegian petroleum exploration and production, Oystein (1980) presented the institutional approach or traditional ways by which the international oil companies through the concessionary system had control of large areas of exploration and thereby had little government interference. For example, in Kuwait, the original 1934 concessions to the Kuwait Oil Company were granted for 92 years; the D'Arcy concession in Iran was granted for 60 years; the 1925 concession granted in Iraq was for 75 years and that of 1933 in Saudi Arabia was for 60 years. Though advantageous for the international oil companies, these long periods were unsatisfactory to the producing countries, whether developed or developing nations.

In designing the concessionary period, the UK opted for 46 years, which was a balance or compromise duration as a shorter period was feared to lead to an irresponsible depletion rate of the reservoirs. Norway adopted 36 years.

In Nigeria, 25 years is the preferred period of time for a concession. Originally, the international oil companies were more or less sovereign in matters of exploration, development and production while the host country had little in incomes from rent and share of profits. This was compounded by the integration of the international oil companies into refining and marketing, which reduced 'arm's length' sales (sales to other parties apart from own oneself or one's own subsidiaries) to the minimum. However, the nationalization of oil companies by the developing countries during the 'oil revolution' of the 1970s reversed the trend. On the heels of the oil revolution, the UK government together with Norway proposed a modification of the usual concessionary system known then as the 'North Sea Model'.

The North Sea model, according to Oystein (1980), was predicated on the fact that government could not allow a free rein for the international oil companies. Given that the UK was already a mature capitalist country, where government interferes with the economic life of the society and industry, unlike in the oil producing developing countries' nascent, incomplete and unstable democracies, the international oil companies were not given a 'free rein'.

In the UK before the 1970s, the main relationship between the government and international oil companies was with respect to the supply of foreign oil to the domestic market, and the government had appreciable knowledge of the microeconomics of the

international oil and gas exploration and producing industry. The international oil companies have had sovereignty over the management of their affairs and had prevented any significant control by the host countries. This has been largely successful because of the peculiarities of the industry which prevented easy entry, easy understanding and control by the host countries. Such peculiarities include: (i) high capital intensity; (ii) high risk; (iii) large cash flow; (iv) a tendency towards joint ventures with the international oil companies as partners and operators of the venture; (v) vertical integration which increases the complexity of operations.

Most host country governments, particularly the developing countries like Nigeria, lacked the knowledge of the industry and the competence to supervise and control them. Most countries therefore needed to understand the workings of the industry gradually. For developing countries like Nigeria, the learning process has been slow due to weak governments which may not be fully democratic, as well as unstable socio-political systems and low technological development. This contrasts with the UK, where democracy is developed and mature according to Seba (1998). The UK government's response to the large and overwhelming influence of the multinational oil companies was to restrict the destabilizing impact of oil operations on the macro economy, through a stiffening of concessionary terms with respect to increases in taxation, introduction of state participation, strict labour, safety and environmental laws. All of these have been aimed at controlling the overwhelming influence of the international oil companies.

5.13 The Petroleum Industry-Government Control Relationship

With the above background, both the international oil companies and host country have found themselves in bargaining, negotiating relationships where neither can do without the other. On the one hand, the government of the host country as landowners, or custodians of natural resources, must provide a legal and economic framework in relation to their country's peculiarities, e.g. a political system must be provided as well as the ability to control the resource, while the international oil companies evaluate the political risks, security of supply and the economics. Hence two key issues arise in the bargaining between the host country and the international oil companies. These are:

(a) A division or apportionment of financial gains i.e. returns on capital for the international oil companies, and government 'take' for the host country.

(b) Control over the activity i.e. the ability to dispose of the available energy resource in the long term, through the integration of resource exploitation (exploration and production) with the downstream sector, is the perception of control by the companies as against the ability to influence micro-economics of the sector, which in turn influences the macro economy, a situation that is paramount for the host country, as a perpetration of policies that preserve socio-economic interest of the country. The impact of these is that future revenue from oil and gas activity in terms of quantity produced and apportionment of returns form the core reasons for control by both the host country and the international oil companies respectively. This therefore portrays the interrelationship between control and economic profitability.

5.14 Control and Economic Profitability

For governments, there is and will always be an inter-twined relationship between wanting financial gains from resource exploitation and the desire to control the operators' activities and share the income. Control may be supervisory to ensure the security of government's revenue income. When operations get complex, control structures tend to become elaborate and the maximum potential economic gains to the government may become elusive, as argued by Oystein, (1980), such that control becomes a distinct aim different from income realisation. Government's ability to exercise absolute control is usually hindered by:

- (a) the need to accept a certain level of returns on investors' investments
- (b) the realisation of the international oil companies' competence in organising both exploration and production better than government itself.

On their part, the international oil companies tend to balance their desire for profit maximization with the peculiarity of their environment of operation, that is, other considerations such as political, country and geological risks. They tend to create situations of long term stability and returns optimization for their business while governments seek revenue and control. Both parties therefore are in constant alliance because of interdependence.

The security of supply due to political stability and predictability of government actions continues to be the basis of the attraction of the North Sea for the international oil companies, despite its harsh weather.

The thrust of the government's reasons for control is summed up in wanting to avoid overheating of the macro-economy through regulation of money supply, and the protection of the country's balance of payment. It is also to protect the economic rent, thereby preventing being cheated by the international oil companies (Morgan, 1976), cited by Oystein, (1980). The government's control framework therefore starts with policy formulation and is then followed by the actual control of operations.

On the heels of the justification for government control is the economics of the operation whereby the expected yield by international oil companies require adequate justification for their investments. For any oil field the economic profitability is determined by the following factors:

(a) The reservoir field location relative to the market

(b) The quality of the oil

(c) The exploration and production costs

(d) The security of supply

(e) The recoverable reserve

For the UKCS of the North Sea, the factors in (a), (b) and (d) are in its favour while the costs of exploration and production are rather unfavourable relative to some other regions of the world. The international oil companies tend to weigh the net effect of all factors which may balance out and explain why they still operate in seemingly unfavourable regions and under tougher fiscal regimes. The North Sea is successful despite its shallow waters, personal safety costs and harsh weather conditions which make drilling difficult limiting it to about 175 days per year. This makes exploration and production risky and expensive particularly in terms of costly equipment and idle time caused by weather related

delays. The weather also affects transportation by tankers, while environmental considerations make pipelines more expensive, particularly because of trenching requirements.

In Nigeria, such factors as the security of supply may be more important due to political risks. Other factors affecting the economics of oil and gas exploration and production include the field size, water depth and the distance of the field from shore

5.15 The Development of Nigerian and UK Oil Policies

The North Sea oil policy was based on the existing oil and gas resources management framework of the concessionary model and the state model. According to the concessionary model, the international oil companies were granted control to explore for and exploit reserves over a large area. There are two forms:

- a. Concessions allocated to international oil companies by auction.
- b. Concessions allocated administratively, that is, through an administrative agent of government like a state oil company.

The second version has been very prevalent in Nigeria where the operations are organised through the state-owned oil company, the Nigerian National Petroleum Corporation (NNPC).

In the UK, both versions were discarded because the concessionary model by auction was believed to give too little power to the host country over allocation or distribution of the licences; while the concession by administrative means was considered to give too much

dominance to the international oil companies, given the terms and large areas of concession. Hence the North Sea model was developed.

The North Sea model is a modification of the concessionary model by administrative means. The government introduced more stringent terms and conditions and reduced the acre-size of each concession. Since then, this has been the basis of both governments' concessions to international oil companies, though with all kinds of modifications to suit the need of the moment.

In all of the above, unlike in Nigeria where the desire has always been largely financial or economic gains, given its dependence on oil revenue (see Table 6), the concern of the UK government has been to control the influence of the oil companies on the economy, reduce exploitation by the companies and maximize revenue.

Table 6:
NIGERIA: PETROLEUM GDP IN RELATION TO OTHER SECTORS AS % of NATIONAL GDP

	<u>1995</u>	<u>1996</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>
Petroleum GDP	40.4	43.6	38.9	27	28.3	39.5
Primary Sector	31.7	30.8	33.7	39	35.6	28.6
Secondary Sector	6.2	5.5	5.8	6.2	5.7	4.8
Tertiary Sector	21.7	20.1	21.6	27.7	30.4	27.2
Nig. Bonny Light API 37 (\$/Bbl)	17.2	20.8	19.8	12.9	17.6	28
UK Brent API 38 (\$/Bbl)	17.5	20.45	19.12	12.72	17.7	28.31

Source: IMF Country Report, Aug. 2001

The UK government's desire in developing its oil policy was more to hold control both in terms of revenue and socio-political considerations of the impact of oil. After the oil crisis of 1972, the UK reviewed its motives and strategies with respect to oil policy. In dealing

with the tax issues raised by the Committee on Public Accounts Department of Energy Report (1974), Mackay and Mackay (1975), as cited Oystein (1980), revenue generation became more prominent than before and led to the introduction of a new taxation system. This new tax regime included a charge on revenue in order to reduce companies' operating profit.

The government also took greater control by renegotiating existing licences to obtain majority state participation and created a wholly owned state oil company, the British National Oil Corporation (BNOC) in 1975, (see Dam, 1976). The new tax regime announced included the cancellation of artificial losses accumulated before January 1, 1973; an introduction of a transfer price for tax computations; the introduction of 'ring fence' for the computation of North Sea operations losses or profit separately from other company business activities. BNOC re-negotiated existing licences and bought 51% at market prices (The Economist, 1978). The first renegotiation was concluded with Gulf/Conoco in January 1976. This development is similar to that in Nigeria where, till now, government's participation averages 55-57% in the joint venture arrangements.

For countries, state participation and special tax regimes or fiscal taxation are indicative of the government's aim of exercising control (and more control) as well as securing a larger share of economic rent or financial gains. Between 1976 and 1978, there were two rounds of licensing (rounds 5 and 6) with BNOC having a minimum of 51% in addition to interests held by the British public. The government's control measures such as tax rates, royalty payments, capital and oil allowances can impact on profitability. Also, a situation whereby government does not control production (as in the UK except in 1982, as against in Nigeria

where, as a member of OPEC, there is a quota on production) has an impact on the production profile of the fields, the cash flows and the revenue.

Generally, the longer the production life of the field, the higher the eventual recovery and the better the cash flow. However, it is possible to have a negative impact on the companies' overall economic profitability if production is restricted below field capacity by government action. The rate of depletion of a field is usually affected by (i) the expected rate of return, (ii) expected price changes or price movements over time (iii) cost variations as determined by the rate of production. Traditionally, the international oil companies tend to finance their investments through equity capital. When costs escalate, they also increase their borrowings particularly when their operations expand to other parts of the world and when profits are low. This was the trend in the 1970s and it is still noticeable today. In normal operations, the major risks are (a) exploration risk of not finding oil in commercial quantity and (b) production risks of cost escalation and delays. For locations of very high risk, international oil companies use higher equity capital to finance operations. Once oil/gas is found in commercial quantity, the development and production phase is financed by higher external finance which does not increase the risk particularly when interests are tax deductible. This tends to improve the cash flows and profit after tax.

Given that neither government nor the oil companies control oil/gas prices, the control of other economic factors by government may worsen or improve economic profitability of the companies with fluctuating oil prices, particularly when such control measures are static or rather not elastic enough. It is however known that groups of producing countries, such as OPEC, make attempts at controlling oil prices. The Memorandum of

Understanding (MOU) signed by Nigeria with the international oil companies tends to capture the need for elasticity in government control measures with respect to oil price movements.

Lastly in this review, it is important to mention state participation as a control measure by governments. State participation takes different forms of contractual agreements, such as joint ventures, service contracts, production sharing contracts etc. The choice of contract type may affect the economic returns for both government and the oil companies. Despite the above, the reasons for state participation are socio-political:

- securing the highest possible share of revenue from oil and gas exploration, possibly in addition to royalties and taxes
- more direct control of operations than may be possible through the different models of concession licensing
- to secure more knowledge of the technology and operations for their nationals.

5.16 Critical Issues in Petroleum Fiscal Taxation

Royalty and Petroleum Taxation

Mommer (2002), citing Ricardo (1821), regarded royalty as a ground rent on natural resources. When we consider the forms of ground rents payable by tenants (in annual payments) in British agriculture in the eighteenth and nineteenth centuries, it is possible to consider that marginal farm produce paid no ground rent. This is because it was possible for the ground not to command the kind of ground rent the landlord is asking for as lands are of different quality, therefore necessitating additional investment to improve the lands in terms of yield. This means that no matter what, an economic rent is required even on the

poorest land that attracts no ground rent. In addition, competition among tenants also increases economic rents in the form of ground rent for landlords. However, because of product (resource) market competition, there is a limit to what tenants can pay for ground and economic rents. The implication of this is that in progressing from the exploration through to the production stages, the tenants watch out to ensure that long term marginal production costs (including the usual profit) are equal to market prices. Suppose that the tenancy is on a share cropping basis whereby ground rent is paid as a percentage of the harvest, (this was also a practice in British agriculture in the eighteenth and nineteenth centuries), either in cash or kind.

In the petroleum industry, the royalty payment is a form of ground rent. With this, royalty as ground rent is part of the price and should not therefore be price determined but price determining. Mommer (2002) pp36 also cites the assertion of McDonald (1979), that 'Royalty affects the margin of land use for mineral extraction and also, to a degree, the price of extracted minerals. This seems to contradict the earlier assertion that rent is price determined, not price determining, but does so only by appearance. Pure economic rent does not affect price, but a fixed royalty as a contractual rent does not coincide precisely with pure economic rent. It is the nature of the contract, not the nature of economic rent, which causes the rent payment to affect price according to McDonald (1979). Modern day versions of the Ricardian rent theory view royalty as ground rent paid as compensation for a wasting asset.

Petroleum Taxation

Following the arbitrary slash of 'Arab Light' crude oil price from \$1.94 to \$1.80 per barrel by the US in August 1960 (a move to protect domestic oil prices in the USA), Aramco (the Saudi Arabia State Oil Company) and other producers moved to break the historical link between world oil prices and the US domestic oil price. Their move prompted the formation of OPEC by Saudi Arabia, Iran, Iraq, Kuwait and Venezuela whose oil ministers met in Baghdad, Iraq and formed OPEC. OPEC's founding resolution (OPEC Res.1.1) stated that all members should '... endeavour, by all means available to them, to restore present prices to the levels prevailing before the reductions'. Despite the insistence of OPEC member states on the restoration of posted prices to the pre-August level, the international oil companies refused. Though posted prices remained at same level, they became higher than market prices, which were falling. This did not appease OPEC. In June 1962, OPEC acted by recommending that member states should introduce taxes based on pre-August 1960 posted price. With this, taxation should be treated differently from royalties. This was intended to ensure adequate fiscal revenue that would compensate for the price reduction. Thereafter, the driving force behind fiscal policy enactments had been the consolidation and maximization of fiscal revenue for the producing states (Mommer, 2002).

Generally, taxation has both political and economic considerations (Dam, 1976). Both affect society and corporate citizens – the companies. In taxation also, legal considerations and connotations are involved just as governments use taxation to manage the macro-economy. Debates have always centred on the suitability or effectiveness of using taxation in managing an economy. In fiscal terms, the balancing of both taxation and monetary instruments may bring about the optimization of the macro-economy at any given point in

time. Detailed discussion on this subject is outside the scope of this research. In the study of petroleum taxation, the critical issues include:

(a) Seeing petroleum taxation as a technical issue, whereby the thrust of the policy is centred on incentives and tax rates that will attract investors. It also recognizes the importance of levels of profit or production costs to investors.

(b) Seeing petroleum taxation in socio-political perspectives, whereby taxation is used to control revenue from the operations to the companies and the government.

With the second perspective, petroleum taxation will serve as a tool for control and for economic rationality. The possibility of the two perspectives becoming contradictory is always alive, which is why government control measures through taxation must not be static.

In the UK, macro-economic considerations have played significant roles in the formulation of its petroleum taxation policies (Oystein, 1980). For example,

(i) Before the oil crisis of 1970-1972, allowing the companies to make high levels of profits was considered inimical to the balance of payment

(ii) Before 1973, the price of oil was low and the UKCS reserves were not yet determined, so the UK government needed to attract the international oil companies. The approach was therefore technical, that is, to woo investors and allow for appreciable return on investment.

(iii) In 1973, the Parliamentary Committee on Public Accounts highlighted the need to increase the government's share of oil revenue to levels comparable to those by OPEC producers.

(iv) In 1974-75, the government increased its revenue share by imposing higher taxes through taxation of revenue in addition to corporation tax. This had the impact of reducing the income base on which corporation tax is levied. It therefore gave additional revenue to the government from the profit of the international oil companies (in addition to corporation tax) which government considered excessive.

In Nigeria, petroleum taxation policy has always been driven by political considerations more so because the country's foreign currency revenue base (since the collapse of the first republic in 1963) is mono-product that is, through oil and gas export sales. For various host governments, the choices of what issues are more important than others differ. However, the critical issues still centre on the following:

- (a) Revenue distribution/share between host country and international oil companies.
- (b) Price movement and cost recovery.
- (c) Financing options and their impact on profitability.
- (d) Incentives for optimal exploration and production of marginal fields.
- (e) Elasticity of government control measures, including tax rates.
- (f) The overall economics of the international oil companies' operations.

For the companies, there is no certainty on what the tax rates will be over the life of a field though the ceiling on UK's PRT enables some certainty on rates of return on investment or corporate profit after tax, though this reduces government take when costs escalate (Hayllar et al 1981). Therefore, a uniform tax rate for all fields and types of operations (onshore or off shore) has not been feasible in most countries, but the key requirement has always been

the balancing of the two perspectives of technical and political considerations in the formulation of petroleum taxation policy.

5.17 Conclusion

It is clear from the literature reviewed that there has been a long standing relationship between the international oil companies and various host governments and that there is always the need to reconcile differences in their individual objectives. While the governments seek to control the oil companies operations, they also have economic objectives.

Governments have objectives that depend on their perceived needs at particular times. For example, while governments of developing economies would concentrate on maximisation of tax revenue, this is related to the significant contribution of petroleum tax revenue to their national wealth. The governments of developed economies on their part would rather synchronise the maximisation of tax revenue with the overall macro economy.

The oil companies on the other hand are interested in the way government tax policy apportions the gains of their operations - that is, they wish to maximise their economic returns. This is in addition to their desire to ensure a continuous flow of petroleum explored and produced, which is why they strive to integrate their operations and develop outlets for the produced petroleum hydrocarbon.

CHAPTER 6

LITERATURE REVIEW II

PERSPECTIVES IN CORPORATE GOVERNANCE - THE SEPARATION OF OWNERSHIP AND CONTROL

Within the overall framework of corporate governance, there are divergences on the nature and problems of corporate governance. Various scholars have, over a period of time, made contributions based on individual research outcomes and perspectives, which will be enumerated in this review of literature.

According to Blair (1995), there are four perspectives in corporate governance, which tend to compete in providing explanations and solutions for the Anglo-American model of corporate governance. These perspectives are:

1. The Principal-Agent or Finance Theory
2. The Market Theory
3. The Abuse of Executive Power Theory
4. The Stakeholder Theory.

The theories have given rise to a division of various points of views into two broad lines, that is:

- i. The Shareholder Perspective
- ii. The Stakeholder Perspective

Both the Principal-Agent or Finance Theory and the Market Theory comprise the shareholder perspective. These first two theories assume that the primary objective of the firm is to maximise shareholders' wealth, while the Abuse of Executive Power Theory and the Stakeholder Theory both argue for a wider sense of stake-holding welfare. The

stakeholder perspective disagrees with the shareholder perspective and argues that the purpose of the firm should not be as narrow as the maximisation of the firm's wealth. It proposes and supports the inclusion of other entities which have not only a relationship, but a long-term relationship with the firm, thereby justifying the inclusion of their welfare. Such entities identified include staff, suppliers, communities, and customers. Proponents of the stakeholder perspective argue that the effective exclusion of these other entities is a disadvantage of the Anglo-American corporation compared to European and Japanese corporate governance structures. They also cast aspersions on the shareholder perspective as failing to encourage employee participation, and inter-corporate co-operation, both of which can enhance economic performance.

6.1 The Shareholder Perspective

Principal-Agent Model

Shareholder perspective theorists perpetuate the principal-agent view of corporate governance. This view is more widespread and dates back to theories which regard firms as legal extensions of their owners (Mayson et al, 1994). Blair, (1995) also asserted that the right to own property by owners (shareholders) makes the assets of corporations belong to shareholders while managers and directors act as agents to shareholders for the maximization of the wealth of the firm. Similarly, she believes that these agents have no legal obligation to any other stakeholders. Principal-agent theorists tend to believe that corporate governance failures and problems are due to inadequate control by shareholders over their agent- management and that management is not penalised enough over poor performance.

At the centre of the argument is the view that the maximization of share value (a form of market value of a firm) is an indication of the long term worth of the company and, as such, the empowerment of shareholders is the solution to the attainment of the wealth or value of the firm. (Blair, 1995). To further appreciate the shareholders' perspective, the following key issues will be examined in this section of the literature review:

- i. the principal-agent relationship in the corporation
- ii the firm as a collection of contractual agreements.
- iii. market efficiency and market discipline.

According to Jensen and Meckling (1976), essentially, the core of the shareholder perspective is the principal-agent relationship (agency theory) which regards the owner as the principal and the manager as the agent. Given that everyone seeks to maximise utility, the theory argues that managers' actions will not always be in the interest of the principals given that some decision making powers and authority have been delegated to the agent. To reduce the impact of such divergent interests, the principal introduces incentives to motivate as well as pay for the monitoring costs. These two related issues constitute the agency problem in the shareholders' perspective on corporate governance.

The agency problem was first identified by Adam Smith (1937). He noted that directors managing other people's money cannot be expected to watch over it with same anxious vigilance as they would watch over their own. As it is generally difficult, if not impossible to ensure that the agent makes optimal decisions from the principals' viewpoint without incurring some cost, such cost constitutes a loss to both parties. This is referred to as 'residual loss' by Jensen and Meckling (1976). Agency cost is therefore defined as the summation of:

- (a) monitoring expenditure by the principal
- (b) bonding expenditure by the agent
- (c) residual loss

where the bonding expenditure is the amount the agent expends in terms of resources in order to ensure that decisions do not harm the principal or that the principal gets compensated if the agent takes such aberrant actions. This agency problem occurs in all organisations and at all levels where there is co-operative effort. To solve this problem there must be a devising of the most effective sets of contracts that will govern the principal-agent relationship and also optimise the agent's interest vis-à-vis that of the principal, i.e. a balancing of interests.

Most literature on the agency problem has concentrated on how best to structure contracts between principals and agents, and the optimal package of incentives for agents such that they will maximise the principal's interest. In focusing on how to obtain or determine an optimal contract between the principal and agent, agency theory attempts to answer the question: which is better (i) a behaviour-oriented contract that involves such issues as salaries and hierarchical governance or (ii) an outcomes-oriented contract which involves issues like rewards, commissions, stock options, transfer of property rights and market governance? (Eisenhardt, 1989). In resolving the issue of an optimal contract for either or both parties, a behaviour-oriented contract is considered optimal when the agents' behaviour is observed, because in this case, it is the behaviour of the agent that is purchased. However, this depends on the availability of complete information about the agent which may not always be available, the principals' choices are either to purchase information about the agent's behaviour or to reward the agent for output achieved through incentives. Hence the optimal contract according to Hart (1995) is to achieve a balance between the incentives to maximise output and protect the agent from risks.

Though there have been various theories of the firm, just as there have been different types of firms, theories of the firm are based on different issues, economic theories, rationalization etc. In the theory of the classical capitalist firm, Alchian and Demsetz (1972) assert that the classical firm has a contractual structure that has:

- (a) joint input production,
- (b) input owners which may be numerous,
- (c) a single party that is common to all the contracts of the joint inputs,
- (d) a single party (same) who has the right to renegotiate any input's contract independently of contracts with other input owners,
- (f) having or holding residual claim and
- (g) who has the right to sell his central contractual residual status.

That central agent is referred to as the firm's owner and its management. By this definition of the firm, it is argued and believed that efficiency in the organisation is enhanced, particularly of team production, where shirking among owners of jointly used inputs are involved. The possibility of revisions of such contracts is also believed to be capable of enhancing economic efficiency, which adds to the wealth of the firm.

Viewed as an economic organisation that requires monitoring, Alchian and Demsetz (1972) posit that there are two major demands placed on the firm in order to facilitate payment of rewards commensurate with productivity: these are metering input productivity and metering rewards, where metering refers to measurement or control of output. They argue that changes in market rewards should fall on those responsible for changes in input. However, should the economic organisation meter poorly, i.e. not properly match rewards

with productivity, productivity is likely to be lowered and vice versa. Similarly, when viewed as an economic organisation with a team in production, a firm usually has the problem of shirking. By team production, reference is made to cooperative productive activity where individual cooperating inputs yield identifiable, separate products which can be summed up as total output.

However, in team production and with several input resources, the product does not equal the summation of the outputs of the individuals cooperating or their marginal products, i.e. their marginal productivity, as argued by (Alchian and Demsetz 1972 pp.779-780). In order to measure marginal productivity in team production for an economic organisation, there must be a way of observing and detecting shirking which is at a cost to the firm or production team through a monitor. Management is generally regarded as the monitor. The monitor is however also expected to be monitored because as an agent of the principal, managerial behaviour will not always maximise the wealth of the firm because of self interest or the managers' desire to maximise their own utility. In order to reduce shirking in the monitor, the principal introduces a package of incentives, e.g. giving a title to the net earnings of the team, net of payments for other inputs (salary). Also, specialisation in monitoring in addition to the title to net earnings will reduce shirking of the monitor. Therefore Alchian and Demsetz argue that managing or examining the way that inputs are used in team production is a method of metering the marginal productivity of individual inputs to the team's output. They conclude that the right to be a residual claimant, to observe input behaviour, to be the central party common to all contract inputs, to alter the composition of the membership of the production team and to sell these rights defines the ownership of the classical or free-enterprise or capitalist firm.

Critical to the shareholder perspective is the nature and definition of firms, which considers corporate governance structures as a complex collection of contracts, which are outcomes of voluntary negotiations and bargaining for exchange of goods and services and at a cost. The principal-agent or finance model sees corporate governance issues as the anticipation and evaluation of agency costs. It believes that when ownership and control are separated, managers will deviate from maximising shareholders' value or the wealth of the firm. However, such separation will not cause inefficiency because the markets for capital, managerial labour and corporate control provide effective restraints on managerial behaviour (Keasey et al., 1997).

It is also believed that the sale of equity by owners brings gains which in addition to the benefits of specialisation (professionalism) of managers, outweighs the cost of separation of ownership control from control or agency cost, hence ownership and control should not be separated.

This perspective also believes that given the managerial labour market, executive stock options as incentives for increased output and the resultant reduction of divergent principal-agent interest, coupled with the market for corporate control through the capital markets, takeovers and the right of shareholders to vote on takeovers, there is significant and adequate restraint on managerial behaviour. Manne (1965) argues that mergers, as one of the three forms of gaining corporate control (the others are proxy fights and direct purchase of shares), favour management and small non-controlling shareholders and has the advantage of reducing wasteful bankruptcy proceedings and creates more efficient management of corporations. It also increases mobility of capital and enables efficient allocation of resources. He asserts further that only takeovers provide some assurance of competitive

efficiency among corporate managers thereby affording strong protection for the interests of a vast numbers of small and non-controlling shareholders. The shareholder perspective sees takeovers as a vital tool in the reformation of corporate governance and that together with other market forces rather than the use of legislation, the problems of corporate governance will be resolved.

The Market Model

The market model forms part of the shareholder perspective of corporate governance, and similar to agency theory, believes in serving the shareholders' interest. However, the market model does not favour 'free riding' and short-termism. According to Blair (1995), the Anglo-American model is flawed in that there is undue emphasis on short-termism (short term stock market share prices, short term corporate expenditure and profit, short term return on investment). This is said to be fuelled by financial market pressures of fund managers, investment managers, and short term gains by the industry; all of which tend to work against the maximization of the wealth of shareholders in the long term.

In his study of corporate governance in five countries, Charkham (1994) observed that there is high tension in the Anglo-American system of corporate governance which constitutes a weakness brought about by unsatisfactory information. He also observed that both boards and shareholders do not exert the required influence and control over management performance nor are the boards sufficiently answerable to shareholders such that firms' medium and long-term outlook is poor. On the other hand, the corporate governance structure in continental Europe and Japan has less tension being characterised by network. According to Charkham, though management in Anglo-American firms claims to behave such that the firm's wealth is maximised on a long-term basis, market pressures

tend to force them towards short-termism. He also concludes that this tendency puts them at a disadvantage when compared with other regions and particularly with respect to industries characterised by long-term gestation.

Underlining the market model is the belief that markets, of which institutional entities are important and integral parts, play roles which force or compel agents or managers to continuously behave in manners that maximise shareholders' wealth. Other market forces recognised are the managerial labour market, the capital market, product market and the market for corporate control.

In addition, the market model argues that maximisation of shareholders' wealth is not the same thing as maximised share prices in the capital market because the capital market itself is unduly centred on short term performance which tends to undervalue both capital expenditure and research & development (R&D) in order to attain stock market price appreciation in the short term. This argument is further reinforced by Blair (1995) who sees the very basis for measurement (of performance by management) as largely short term in outlook because they are based on quarterly results. Similarly, she argues that institutional fund managers cannot keep proper track of companies' performance in details other than by relying on the summarised quarterly, half-yearly results provided by management. Their judgement is therefore poor in outlook and scope. Thus share prices may result from poor assessment of the companies which can cause significant changes in the market value without corresponding significant change in the fundamentals of the company.

With regard to the necessary corporate governance reforms required, the model argues that both principals and their agents should share the longer term performance vision (by

locking institutional investors into long-termism through the restriction of the take-over process and the voting rights of short term shareholders thereby maximising their mutual interests.

6.2 The Stakeholder Perspective

The stakeholder perspective regards the basic objective of corporate governance as 'managerial freedom with accountability'. This requires giving executive management the freedom to manage and develop the firm's business on a longer-term basis and at the same time hold them responsible and accountable for all stakeholders having to do with the business.

This perspective rejects the shareholder perspective of the principal-agent model, disagreeing that managers are agents to shareholders; rather it claims that managers are like trustees and in this regard, they differ from agents in two vital respects:

(a) That as trustees, they are to sustain the company's assets which are not limited to shareholders' equity but include the skills of company employees, the reasonable expectations of input owners, like customers and suppliers, with whom there are contracts, and the firm's reputation within the community. That is, the focus of managers should be in serving the broader interest of the firm and not only the maximisation of the financial interest of shareholders.

(b) That as trustees, managers should balance the conflicting interest of all stakeholders and those of present and future stakeholders rather than just the interests of present shareholders.

It is believed that when managers are regarded as trustees, there will be a shift from short-termism to long-termism in the management of firms. It is noted by the stakeholder perspective that the shareholder theory which defines corporate governance as a set of relationships between principals and their agents does not realistically describe the real life governance structure and processes and that, rather than adapt reality to the model, their model should be adapted to accept the reality.

An example of such a description of the flaws in the shareholder theory is to liken the model to an authoritarian government in which the governing elite appoints its favoured members and on its own terms. Take-over attempts are viewed as rebellious, just like management rebuffs corporate take-overs by claiming to act in shareholders' interests in an attempt to defend their positions. Those who support the stakeholder perspective recommend statutory changes in corporate governance. For example, they propose changes to the situation whereby the shareholders alone are involved in taking major decisions, the publication of fuller information about corporate affairs and the fiduciary functions of non-executive directors. These are the major areas of reform, proposed for the stakeholder perspective.

The proponents of the stakeholder perspective believe that the abuse of executive power is related to the on-going problem of excessive pay and remuneration for executives. At the centre of the stakeholder model of corporate governance is the purpose and objectives of firms. That is, rather than the maximisation of shareholders' wealth, which is considered parochial, the interest of customers, staff and suppliers whose involvement with the firm are on a long term basis such that they have a 'stake in its long term success', should also be taken into account.

The stakeholder perspective in corporate governance, as initiated by Freeman (1984), defines a stakeholder as 'any group or individual who can affect or is affected by the achievement of the firm's objectives.' He argued that the terminology 'stakeholder' generalises the groups as against shareholders only to whom management is responsible.

Freeman listed shareholders, customers, employees, suppliers, creditors and management as primary stakeholders, who are critical for the survival and success of the firm; and the secondary stakeholders as the media, the local community, the regulatory authorities of government, the judiciary and society at large. Blair (1995) argued for a rethink of the basics of corporate governance and included amongst stakeholders, employees and customers who contribute specialised skills and investments. She argued further that rather than just being physical assets meant to serve the interest of shareholders alone, firms are institutional arrangements set up to govern relationships among these stakeholders, and that firms are set up in order to maximise stakeholders' value. She believes that because employees are more eager and willing to exercise the rights and take responsibility as owners (which shareholders and institutional investors are unwilling to do), they qualify to become owners with equity shares that mirror the extent of their wealth creating contributions.

In their contribution, Letza and Smallman (1998) query the appropriateness of the Anglo-American (unitary board structure) corporate governance structure, that is, shareholder theory. In their study of the privatisation of Yorkshire Water plc, they argue that the U.K. accountancy profession's strong emphasis on shareholder value, and their failure to acknowledge the importance of wider stakeholder groups, mirrors the political paradigm

that prevailed in the UK in the 1980s and 1990s. During those periods, the Accounting Standard Board's study suggested that shareholders as the providers of risk capital are the primary stakeholder group and all other stakeholder groups are secondary and subservient to the needs of the shareholders. Letza and Smallman argue that though financial profits are good and important, customers as part of the stakeholder group should be involved in governance. They emphasised that the unitary board structure of the UK water industry (an example of the Anglo-Saxon corporate governance structure) had failed and should be replaced by the dual board structure that allows representation of other stakeholders on the supervisory board, as presently adopted by the BBC, Cadbury and John Lewis Partnership. The argument of Letza and Smallman presents the moral property of the behaviour of corporations and managers and prescribes moral or philosophical guidelines for corporations and those having supervisory functions over corporations.

Apart from the normative aspect of the stakeholder theory which is concerned with the morality of firms by querying if the firm has corresponding and functional interest in all stakeholders (apart from shareholders), there are also the descriptive-empirical and instrumental aspects. The descriptive-empirical aspect explains the behaviours of firms or their managers in terms of cooperative and competitive interests. The instrumental aspect establishes the link between the practice of the stakeholder corporate governance model by firms and the attainment of profitability, stability and growth. With this aspect, it can be argued that the stakeholder theory is not in conflict with the shareholder principal-agent theory if ethical behaviour can be employed to maximise long-term profit maximisation for shareholders (Keasey et al, 1997).

Generally, the stakeholder perspective believes that firms practising their model of corporate governance often develop ethical relationships with employees, suppliers and customers; as such, with trust built up over time, the relationships become mutually beneficial as the costs of social interaction and association are reduced and investments become more profitable.

Two major industrial nations which practice stakeholder theory are Germany and Japan and, given that they are successful industrially, give some credibility to the theory. In Germany, firms have social obligations to both their employees and the local communities other than shareholders' interests alone. For the Japanese, though profit is important, stakeholders are linked by a network of relationships called 'Keretsu' (Charkham 1994). Though not without its disadvantages, the practice of interlocking shareholdings, cross-directorships, long-termism, protection of the interests of the public, preservation of employment and the consideration of all stakeholders in decision-making has assisted the successes recorded by the firms who approach their corporate governance from the stakeholder perspective.

In concluding, the above literature on historically prevailing shareholder and stakeholder perspectives of corporate governance, the key issues that characterise the theories in each of the two perspectives are as stated below.

Shareholder Perspective

1. Principal-Agent or Finance Model

- Major Contributors: Jensen and Mecking, 1976; Manne, 1965

Alchain .and Demsetz, 1972

- **Objective of the Firm: Maximisation of shareholders' wealth.**
- **Problem of Corporate Governance: Agency problem.**
- **Background: Separation of ownership from control.**
- **Assumptions: Assumes that agency problem is caused by self interest managerial behaviour.**
- **Rejection: Any ex-post external interventions such as legal regulations.**
- **Proposition: Efficiency of markets (capital, financial etc.)**
- **Solutions: Strengthening of incentives to synchronise managerial behaviours with principal interest, introduction of monitoring, voluntary code.**

2. Myopic Market model

- **Major contributors: Charkham, 1994**
- **Purpose of the firm: Maximisation of shareholders' wealth.**
- **Problem of Corporate Governance: exercising short-termism, caused by ineffective market forces.**
- **Background: The rise of corporate takeovers.**
- **Assumption: Dis-functional markets**
- **Rejection: Market Governance.**
- **Proposition: Emphasis on long termism**
- **Solution: Increased involvement of shareholders, increased shareholder loyalty and restricting shareholder ease of exit and empowerment of long term investors.**

3 Executive Power Model

- **Purpose of Firm: Maximisation of the wealth of the firm as a whole (i.e. including management).**

- **Problem of corporate governance: Abuse of executive powers of management in serving own interests.**
- **Background: Managerialism.**
- **Assumption: Authoritarian governance as a requirement for performance.**
- **Rejection: The principal-agent analysis.**
- **Proposition: Manager as trustees**
- **Solutions: Statutory changes in governance.**

Stakeholder Perspective

- **Major Contributors: Freeman, 1984; Blair, 1995**
- **Purpose of Firms: Maximisation of stakeholder wealth.**
- **Problems of Corporate governance:**
 - **Sole involvement of shareholders**
 - **Failure to consider other stakeholders interest and lack of other stakeholders involvement.**
 - **Rejection: the Principal-Agent model.**
 - **Proposition: the social consideration in economy.**
 - **Solutions: development of trust based relationships, long-termism and firm stakeholders' cooperation.**

These perspectives and the models reviewed highlight different aspects of corporate governance. While the principal-agent model of the shareholder theory focuses on market governance, the perceived failure of market governance and internal monitoring partly explain the cause of corporate governance problems. Given the imperfection of the market place, the model is criticised as not being sufficient to solve these problems. The other

perspectives emphasise stakeholders' involvement in decision making, active shareholder voice and monitoring in the face of the conflicting roles of institutional shareholders and the ineffectiveness of corporate internal monitoring mechanisms. The various competing perspectives remain the basis of corporate governance with both exerting influences on corporate thinking and practices.

All of the perspectives invariably indicate real life interaction among social entities though with varied perception of identifiable social entities whose relationship is not that entitative but interactive. They also provide relatively predictable outcomes with respect to corporate performance which are outcomes of the dynamic interaction of factor inputs, social interaction, negotiations and competing forces in the market place. Considering that the dynamism of corporate operations gives relatively predictable outcomes, such prediction is certainly not with full assurance.

Emerging corporate governance perspectives are therefore required to involve multifaceted considerations, built on the enduring traditional perspectives such that agency problems or problems associated with management as trustees will be solved with positive resultant effects on corporate performance and the maximisation of stakeholders' wealth.

6.3 Separation of ownership and control and corporate performance

The modern theory of the firm represents the foundation on which rests every other notion, hypothesis and theory on the relationship between ownership, control and the economic or financial performance of firms, as provided by Berle and Means (1932). The bedrock of their characterisation of the modern corporation is that in the modern corporation, there is separation of ownership from control. This gave rise to abundant research and volumes of

literature on the effects and significance of ownership structure, control structure and how they impact on the financial and economic performance of firms. This theory however, contradicts the neo-classical theory of the firm, which regards the sole objective of the firm as profit maximisation and has no consideration for the behaviour of participants (owners and agents) in the firm. This neo-classical theory of the objective of the firm was presented by Jensen and Meckling (1976), as preservation of value.

The inability of the neo-classical theory to mirror the behavioural pattern of both principals and their agents assumes that their objectives and therefore their utility functions are common or similar. Given that human beings are naturally inclined to pursue their own objectives that maximise their individual interests, it is arguable that when ownership is diffused, control diminishes and managers may tend to pursue objectives that satisfy their own interest, and which are not necessarily profit maximization or preservation of value, and possibly detrimental to other shareholders (Short 1994). The divergence of interests however depends on the extent of separation of ownership and control. The resultant effect of this is an impact on corporate economic and financial performance. The separation of ownership from control (and its extent) therefore, creates or perpetuates the agency problem and managerial discretion. Munsen and Downs (1965) argue that the separation of ownership and control causes the motivation of owners to be different from that of managers in many cases.

Ownership and Control of Management

The term control is defined as the power to select and change management, and it is determined by the distribution of the firm's voting securities (Berle and Means, 1932). The nature of control of a firm is often latent, being not always actively exercised, though its

existence is enough to keep the behaviour of managers in check. In some cases, it is very active, e.g. the management and control structure of joint ventures in developing economies like Nigeria (Naiyeju, 2000).

Typically a simple shareholding majority of 20% of voting stock is considered to be owner-controlled (Berle and Means, 1932). Moreover, wherever there is a representation on the board of directors or in the management for such owners, the control is regarded as active, whereas when single minority but block holding of between 5-20% exists and the rest of the stock is widely held, control is diffused and weakened. Such firms are management controlled. A more recent definition of control was provided by Fama and Jensen (1983) as the ability of a particular individual or group to effectively determine the decision making process in a firm. This does not necessarily imply involvement in the daily management process, but rather involvement in the fundamental decision making process including selection of managers and directors (Leech and Learhy, 1991).

In the Nigerian oil industry, control by government as a majority shareholder includes involvement in the termination of managers in addition to their appointment in respect of the joint venture contract type.

Ownership Structure and Performance

For the purpose of empirical work, there is always some measure of difficulty associated with the above definition of control. The definition and distinction between owner controlled and management controlled firm's, based on shareholding or ownership structure, is more widespread and easier to employ. There have been departures from the equity based, dichotomous variable, based on percentage shareholding. For example,

McEachern (1975) classified owner-controlled firms into two groups, that is, making a distinction between outside owners that are not actively involved in management (as externally controlled firms) and owners who are managers (owner managed firms).

Generally, there is no consensus on the level of ownership and control classification. This has affected the interpretation of research results on ownership and control separation and its impact on the firm (Short, 1994). The various authors on the subject of the separation of ownership and control and corporate performance up to 1991 are summarised below.

Table 7: Summary of Research Studies and Results on Relationship Between the Separation of Owner and Control and Economic Performance (1968-1991) *

Author	Period	Control Classification	Dependent Variables	Results
Monsen et al (1968)	1952 - 63 500 largest US industrial firms	OC - $\geq 10\%$ and evidence of active control or, $\geq 20\%$. MC - $\leq 5\%$ single block Of voting stock	Net income/net worth. Sales/total assets. Net income/total assets. Net income/sales. Long-term debt/capitalisation	On average, all ratios higher for OC firms, except long-term debt/capitalisation ratio lower for OC firms. Net income/net worth Significantly higher for OC firms
Kamerschen (1968)	1959 - 64 200 largest US non-financial firms	OC - $\geq 10\%$ MC - $< 10\%$	Rate of return on equity	No significant different between MC and OC firms, but significant positive relationship between dependent variable and change in control.
Larner (1970)	1956 62 187 of largest 500 US non-financial firms	OC $\geq 10\%$ MC $< 10\%$	Profit/equity	Small significantly negative relationship between MC firms and variance of profit/equity
Radice (1971)	1957 - 67 86 large UK firms in three Industries	OC $\leq 15\%$ MC $< 5\%$	Profit before tax/Net assets (Profit rate). Growth in net assets.	Insignificant positive relationship Between MC firms and variance Of profit/equity OC firms associated with higher Profit rates and growth rates. OC firms greater variability in Relationship between profit and Growth rates.

Author	Period	Control Classification	Dependent Variables	Results
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Elliot (1972)	1964 – 67 88 firms from S & P's Compustat Data	As Monsen et al	Liquidity. Growth in owner earnings. Management profit performance. Leverage Capital Investment	Only significant difference in Terms of liquidity between MC And OC firms
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Boudreaux (1973)	1952 – 63 72 – 500 largest US industrial firms	As Monsen et al	Return on equity	OC firms associated with significantly higher and more variable rates of return than MC firms.
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Palmer (1973)	1961 – 63 500 largest US firms	SOC - >3% WOC – 10 – 29% MC - <10%	Average rate of return on net worth	Average profit rate significantly lower for MC firms, but only if firm has monopoly power.
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Sorenson (1974)	1948 – 66 30 OC and 30 MC firms from 11 industries	OC - ≥20% MC - <5%	After tax profits/net worth Stockholder rate of return. Dividend payout ratio, growth in sales. Growth in net worth	Some significant differences between industry groups, but overall, no difference between OC and MC firms.
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Holl (1975)	1948 – 60 183 quoted UK firms	OC - ≥50% by individual or 20 – 50% by individual if 20% held by largest 20 shareholders subject to certain constraints. MC- all other firms	Pre-tax profit/net worth. Growth rate of net assets. variance and skewness of profitability. Dividend Payout Ratio	No significant difference when Industry bias removed
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Author	Period	Control Classification	Dependent Variables	Results
Ware (1975)	1960 – 70 74 large mature firms in US food and beverage industry	OC - >15% by one party and representation on board or management or >25% by one party. MC - ≤5%	Net Income/net worth. Net sales/no. of employees Retained earnings/net income. Debt/total assets	MC firms found to be more profitable but less efficient than OC firms
McEachern (1963 – 72)	1963 – 72 48 large US industrials in 3 industries	O - M ≥4% and management representation. E - C ≥4% and no management representation. MC - <4%	Average market rate of return. Payout ratio. Risk. Growth of sales	O-M and E-C firms significantly higher rates of return than MC firms, O -M firms outperformed E-C firms. O-M firms significantly more market based risk than E-C firms falling between groups. O-M firms retained significantly more earnings than E-C and MC firms.
Stano (1976)	1963 – 72 354 large US firms	As Palmer	Stock returns appreciation	Stock return significantly higher for strong OC firms. OC firms more risk averse, less merger activity, smaller and higher growth of EPS.
Round (1976)	1962 – 64 289 large Australian firms	OC - > 10% held by persons among top 20. MC - persons hold <5%. CC - >15% held by other company	Net income/total assets	OC firms have insignificantly higher rates of return than MC firms.

Author	Period	Control Classification	Dependent Variables	Results
Holl (1977)	1962 – 72 343 out of top 500 US firms	As Palmer	Average market rate of return (including dividend return and stock price appreciation)	OC firms significantly outperformed those MC firms able to evade the market for corporate control.
Steer and Cable (1978)	1967 – 71 82 of top 250 UK firms	OC- >15% by cohesive group or >3% by managers. MC- others	Rate of return on equity. Rate of return on equity and long-term debt. Price-cost Margin (profit/turnover)	OC firms significantly outperform MC firms for all measures of performance.
Thonet and Poensgen (1979)	1961 – 70 52 – 92 quoted German manufacturing firms (pooled yearly)	OC- >25% owned by cohesive group. MC- <25% owned by cohesive group (excludes companies where >25% owned by government, another company of institution.	Return on equity. Market rate of return. Market value/book value. Growth of total assets. Variance of return on equity	MC firms have significantly Higher return on equity and Market value/book value and Insignificantly higher market rate of return. OC firms have greater Growth in total assets. For firms in high concentration industries. OC firms have insignificantly Higher variances than MC firms. The reverse is true in low Concentration industries.
Jacquemin and de Ghellinck (1980)	103 of 200 largest French companies.	Majority control - ≥50%. Minority control- between 5-50%. Internal- no group >5%. Case by case approach to divide Into familial (FA) and non-familial (NFA).	Net cash flow/book value of equity and reserves.	No significant difference Between majority control and Minority control or between FA and NFA. Positive effect of size on FA firms but not NFA.

Author	Period	Control Classification	Dependent Variables	Results
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Bothwell (1980)	1960 – 67 150 large US industrial companies for top 500	As Palmer	Risk-adjusted economic profit margin (CAPM) on sales. After tax return on shareholder Equity.	SOC and WOC > MC (significant for firms operating in industries with high or substantial barriers to entry) SOC and WOC > MC generally.
Levin and Levin (1982)	1967 – 76 200 largest non-financial US firms.	OC- $\geq 10\%$ MC- $< 10\%$ FC- \geq owned by financial Financial institutions if another Party owned $\geq 10\%$ or $\leq 5\%$ if no Other party owned $\geq 10\%$ or Financial institution was leading Supplier of capital and on board of Directors and no other party Owned $\geq 10\%$	Rate of return on equity. Shareholders total return. SD of profits. COD of profits. % growth in sales. Capitalisation ratio. Payout ratio	Significant difference between Control types for return to Shareholders, risk and growth.
Demsetz and Lehn (1985)	1976 – 80 511 US firms	Ownership Concentration. A5- % of equity owned by 5 largest shareholders. A20- % of equity owned by 20 largest shareholders. AH- approximately of Herfindahl Measure of ownership Concentration	Accounting rate of return (average annual net income/book value of shareholders equity)	No significant relationship between ownership concentration and accounting rate of return.

Author **Period** **Control Classification** **Dependent Variables** **Results**

Morck et al (1988)	1980 371 US firms from Fortune 500	% of equity owned by members of the board of directors. Dummy variable to denote Presence of founder or member Of founding family on board	Tobin's	A positive relationship between Management ownership and Q in the 0% to 5% ownership range, a negative and less pronounced relationship in the 5% to 25% range and a positive but less pronounced relationship beyond the 25% ownership level. In old firms, presence of founder has negative effect on Q, the reverse is true for young firms.
Holderness & Sheehan (1988)	1979 - 84 101 majority held and 101 diffusely held US firms, matched by industry and size	MH- $\geq 50\%$ but $< 95\%$ by one individual, family or entity. DH- $\leq 20\%$ held by any shareholder	Accounting rate of return. Tobin's Q	MH firms have insignificantly higher accounting rates of return but insignificantly lower value for Tobin's Q.
Murali & Welch (1989)	1977 - 81 43 closely held and 83 widely held industry matched US firms	CH- $> 50\%$ by small group or individual. WH- all other firms.	Stock market return. Accounting profit rate. Market value.	No significant differences in dependent variables between Closely held and widely held firms.

Author	Period	Control Classification	Dependent Variables	Results
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McConnell & Servaes (1990)	1976 and 1986 1173 & 1093 US firms	OC- % of shares owned by corporate insiders. LB1- % of shares owned by largest single blockholder (shareholders owning $\geq 5\%$). LB2 -% of shares owned by blockholders. LB3 - dummy variable for presence of blockholder. INSTO -% of shares owned by institution.	Tobin's Q	Significant curvilinear relationship between Q and OC. No significant relationship between Q and blockholder variables, but significant positive Relationship if assume blockholders and insiders operate in conjunction INSTO positively related to Q
Zeckhauser & Pound (1990)	1988 - 89 286 US firms drawn from 22 industries, 11 industries classified as being open information structure industries and 11 as being closed information structure industries, based on the ratio of R & D to sales (proxying for asset specificity)	Large shareholder defined as single external entity owning 15% or more of outstanding voting stock.	Earnings/price ratio	Earnings/price ratios significantly lower for firms with large shareholders operating in open information structure industries as compared to firms without large shareholders. No significant difference for those firms operating in closed information structure industries.

Author	Period	Control Classification	Dependent Variables	Results
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Leech and Leahy (1991)	1981 – 85 470 UK listed firms	Control type – Fixed rules: OC1, OC2, OC3 – largest shareholding <5%, 10%, and 20% respectively. Control type-variable rules: OC90, OC95, OC99- degree of control of largest holding exceeds 90%, 95% and 99% respectively (defining using probabilistic – voting model of Cubbin and Leech (1982) Ownership concentration measures H- Herfindahl index. C1, C5, C10, C20- combined holdings of largest 1, 5, 10, and 20 shareholders, respectively	Valuation ratio (VAL) Trading profits margin (TPM). Rate of return of shareholders capital (RSHC). Rate of growth of total sales (TSG). Rate of growth of net assets (NAG)	Significant positive relationship between control type and profit rates (TPM, RSHC) and growth (TSG, NAG). In general, variable rule based control variables were significant, never fixed rules. Significant negative relationship between ownership concentration and profitability (VAL, TPM) and growth (NAG). In general, C20 was significant.
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Notes

OC	owner control
MC	manager control
SOC	strong owner control
WOC	weak owner control
CC	company control
FC	financial control
O-M	owner managed
E-C	external control
CH	closely held
WH	widely held
MH	majority held
DH	diffusely held

* Source: Short, (1994)

In his contribution, Pound (1993) argues that the debate over corporate governance is no longer about hostile take-overs through which corporate control is achieved by purchasing voting rights. Rather he says, it is through the development of voting support from dispersed shareholders, who with their shareholdings though sometimes significant, but not large enough for control, could be rallied in order to aggregate controlling shareholding and influence or control the organisation over the long term. This approach he referred to as the 'political model of corporate governance'. The aim of large shareholding is therefore, achieved through such a political model, that is, pursuance of ideals and objectives that are central to those controlling voting rights.

Apart from the divergence of opinion on ownership and control classification, as enumerated by Table 7, there is equally no consensus on the specificity of effect of ownership structure on firm value. We can start tracing literature with the 'convergence of interest hypothesis', which predicts that an increase in firm value as managerial equity ownership increases as a result of the alleviation of the agency problem, when incentives to consume perquisites and expropriation of shareholders' wealth reduces with increased managerial equity (Jensen and Meckling, 1976). Another is the hypothesis that large shareholding by non-management insiders enhances effective control (Demestz, 1986), as cited by Slovin and Sushka, (1993).

Other views include the effectiveness of sufficient market control in inducing management to maximise shareholders' wealth through a reduction of the agency problem (even when low managerial ownership should have encouraged the agency problem). It is argued that market control mechanisms which can be in any of the following forms is sufficient enough a control: managerial labour markets, (Fama

1980), financial institutions, particularly the banks, (Stiglitz, 1986), capital markets, (Easterbrook, 1984), product market (Hart, 1983), and the market for corporate control (Jensen and Ruback, 1975).

On the other hand, the 'managerial entrenchment model argues that increased insider ownership concentration permits managerial consumption of perquisites and entrenchment of incumbent management, which thereby reduces the probability of bidding by outside agents. This in turn reduces the value of the firm. (Fama and Jensen, 1983; Barclay and Holderness 1989). Similarly, Stulz (1988), as cited by Slovin and Sushka (1993), found that firm value increases as managerial equity increases up to 50% and beyond this firm value starts to decline because it blocks take-overs or makes it more expensive.

In their own contribution, Slovin and Sushka (1993) concluded that where there is a single individual large share holding, just as where there is no firm's openness to market for corporate control, the market frowns at such situations (firms) because there is no indication of an alignment of managerial and outside shareholders' interest. This is therefore regarded as having a negative impact on the value of the firm. Zingales (2000) is more circumspect in his appraisal of corporate finance theory and its foundation in the neo- classical theory of the firm. He suggested a review, and propounded the need for new foundations or new understanding of the firm, rather than being a nexus of contracts, which he believes is faulty, in that if it is so, then there should be no need for mergers as those merging companies could just easily write out contracts for themselves instead of merging. He concluded that stakeholders

(whose divergent interests may paralyse or destroy the firm after elaborating on the diffusion of corporate power amongst them), and the changing nature of the firm (from asset based to human based), that has diffused power, will force corporate governance to re-examine the allocation of de jure control rights when there are many sources of de facto control rights. All of these will no doubt affect the value of firms.

Whereas some scholars have argued that there is no proof confirming any relationship between owner-controlled or management-controlled groups of firms and performance, Morck et al (1988), McConnell and Servaes (1990) and others argue that such relationships exist. Mosen et al (1968) concluded in their study on the effects of the separation of ownership and control on performance of large firms, that owner-controlled firms provide better returns on original investment (up to 75% and more). This suggests a better managed capital structure and a more efficient allocation of resources than observed from management-controlled firms. This was corroborated by Leibenstein (1966).

More recent studies highlight the significance of control exercised where ownership and control are separated. This is particularly so with large shareholders that is, those having single majority shareholding of more than 10% of stock or in more extreme cases 51% or more. Such large shareholders are said to be capable of addressing the agency problem because they have adequate control to have their interest respected (Shleifer and Vishny, 1996). Shleifer and Vishny reported that such large shareholdings are relatively uncommon in the US due to legal restrictions (Roe, 1994), though equity ownership is not totally dispersed either.

A study by Holdernes and Sheerhan (1988 a, b), cited by Shleifer and Vishny (1996), reported cases with 51% single shareholders in US public firms. In their study, Shleifer and Vishny (1995) also reported an empirical survey of 456 of the Fortune 500 firms for December 1980 in which the US companies recorded an average holding of 15.4% for the largest shareholder and 28.8% as total average holding of the largest five shareholders. The large shareholders are reported as essentially pension funds and other financial institutions (banks, insurance and investment companies). The dispersion of equity with minimal occurrence of large shareholders is the case in the UK study by Black and Coffee (1994), as cited by Shleifer and Vishny (1995). Large shareholders were noticed to be very rare, indicating that large shareholding occurred only minimally in the UK.

This phenomenon of large shareholding is said to be prevalent in Germany, with 80% of large companies having more than 25% non-bank shareholders, as evidenced through the work of Gorton and Shmid (1996); and with the banks holding more than 25% equity in major companies as reported by Franks and Mayer (1994) and the OECD (1995). Both studies were cited by Shleifer and Vishny (1996).

With all of these findings, large shareholders are viewed as playing active roles in corporate governance and in dictating decisions for the companies. With the foregoing, a key and fundamental issue is that large shareholders' interests may not always coincide with those of other investors and stakeholders in the firm. As a result of this, shareholders' expropriation (which is not necessarily efficient) may affect the performance of the firm. This thesis wishes to investigate this phenomenon with respect to Nigeria's oil and gas exploration and producing companies where the government has a large shareholding.

State ownership of firms is sometimes argued to be the best way to provide public services and this argument could be extended to state ownership of industrial firms too. Though the reality of state ownership is hardly consistent with this efficiency argument, as argued by Shliefer and Vishny (1996). A twist in this argument was also contributed by Letza (1998), in his findings on the factors that contributed to the failure of public services (water) in Yorkshire, in 1995. He attributed the problems to both the state and managerial failings in considering little of the interest of the minority stakeholders, like consumers, even as the public sector was then associated more with waste and inefficiency. Their actions, he posited could have resulted in drought. In this case, the bureaucrats, management and shareholders had extremely concentrated control rights.

State ownership of firms also sometimes results in having to cater for special interests for political reasons. Such concerns are not therefore in the interest of other shareholders and may be different from profit maximisation (Berle and Means, 1932) and the preservation of value (Jensen and Meckling 1976). State ownership with large shareholdings is therefore a good example of concentrated control with possibly no profit maximisation and with inefficiency inherent, thereby affecting economic performance. The application of this to Nigeria's oil and gas exploration and production is a key part of this research.

In conclusion, and given these contrasting approaches and theories, it is difficult to generalise the actual impact of equity ownership concentration (and the inherent control implications for large share holding) and separation of control on the economic performance of firms.

This research seeks to contribute empirical evidence to the analysis of the behaviour of large shareholdings, particularly through state ownership of petroleum companies operating in Nigeria, and its impact on the economic performance of these companies.

6.4 State owned oil companies (NOC)

6.4.1 The Birth

After the discovery of crude oil and the initial ownership by individuals between the two world wars, limited liability companies assumed ownership. According to Daniel (1998), chief among them was J.D Rockefeller's Standard Oil Corporation of New York and Exxon, USA. Others include Mobil, Texaco, Gulf, Royal Dutch Shell, British Petroleum and Compagnie Française des Petroles. These companies grew in size over time, such that their operating system was increasingly dependent on massive management structures and the ownership of subsidiary companies.

State owned (or national) oil corporations emerged as a result of the Russian revolution when in 1917, the oil industry in Russia was nationalised. When in 1938 Mexico's PEMEX was formed, we witnessed the emergence of state owned national oil companies. Several others followed after the Second World War. Apart from the big multinationals like Exxon, Mobil etc. who were the driving machines (and have continued to be), the smaller oil companies called 'the independent' also emerged. In order to gain market share, (have access to the oil fields) they associated with various governments through different kinds of contractual agreements with the state owned national oil companies. Though predominant amongst OPEC member states, some countries in the west also have state owned oil companies e.g. Norway's Statoil, Canada's Petrocanada. The UK's

British National Oil Corporation (BNOC) was formed but existed for only nine years, 1976 – 1985.

6.4.2 Why State Owned or National Oil Companies?

Over the years, particularly after the world wars and given the crucial role of BP/SHELL in the conquest of Nazi Germany and victory for the Allies, petroleum resources have become strategic for nations.

Considerations centre on:

- security of supply for military purposes
- security of supply for commercial and domestic markets
- conservation of supply
- revenue generation
- health, safety and environmental considerations
- development of indigenous technological know-how
- using own personnel for the resources exploitation rather than foreign involvement.

As a result of these and other reasons that might not have been stated or inferred from their mission statements, state owned or national oil companies exist world-wide both in developing countries and in the western world. See Appendix 3.

Governments without State Owned Petroleum Companies

Examples abound of countries with petroleum hydrocarbon resources of oil and gas and yet do not have national oil companies. The United States of America (USA) and United Kingdom (UK) are the best examples.

Despite the reasons mentioned as responsible for having state owned oil companies, it could be that direct exploration and production by these national companies may be more expensive and more financially risky.

6.4.3 State Owned Oil Companies and Corporate Governance

The nature of corporate governance in most state owned oil companies could be summed up as serving the sole interest of the various governments. The particular structure(s) is however dependent on the interests, concerns and local peculiarities of the country. Generally, according to Bentham and Smith (1989), most state-owned oil companies are created by government decree or statute; they are referred to as parastatals, sometimes exempt from certain taxation, and having a particular corporate structure. The choice of corporate structure is usually to create them as single corporate, legal entities that make any government action through them questionable. It therefore makes it impossible to challenge government directly.

The companies are also formed as joint stock companies, a common corporate structure in the petroleum industry worldwide, and for the reason that the government does not want to be seen as directly involved in exploitation. Another reason for state ownership is that it allows the government to keep an eye on the operations of the industry for security of supply and to ensure the acquisition of technical know-how by own nationals.

Appointments to the Board of Directors, whose decisions are not final, but subject to the head of state or presidency is a common feature. The government control is thus found to be firmly in control through such powers. Some characteristics of state owned oil companies are:

- **Power to vote or control expenditure and budgets resides with the Head of State or his appointee.**
- **Appropriation of profits is made by the corporations or its subsidiaries to the government.**
- **Non-public nature of its share structure, i.e. stock or share ownership structure does not allow the public to invest.**
- **The government or their agency reserves the right to confirm the appointment of auditors.**

All of the above characteristics allow governments to exercise control over the operations of state owned oil companies, their subsidiaries and partnerships or companies where they have substantial equity holding. The impact of such large shareholding is at the heart of the corporate governance aspect of this research.

CHAPTER 7

METHODOLOGY

This chapter seeks to explain how the research was conducted. In particular, the chapter explains the research methods adopted, data sources, a description of the data, an explanation of the oil industry contract types, the analytical tools employed and the type of analysis conducted. It also presents excerpts from the interviews conducted for the qualitative part of the research and the statistical methodology. Similarly, this chapter sets out the research hypotheses proposition to be tested in chapter 8.

It is not unusual for research methodology to become problematic, though the intention of methodology is to provide a systematic approach to the study and eliminate such problems. Research methods assist in conducting investigations into frontiers of knowledge, through surveys of people, surveys of records and procedures, literature survey or review, interviewing, examination of registers, observations of data, observations from experience (though this is subjective), data gathering and data analysis.

From the above, it is obvious that research methods are now very diverse. The choice of which method(s) to use will depend on the particular study in question. Very often, the saturation surveying technique is employed, whereby extensive field interviewing is embarked upon because it is comprehensive and up-to-date. It is however not always the most suitable. Some research methods give rise to qualitative and/or quantitative data analysis, which in turn make inductive or deductive analysis pertinent. Generally, it is important to recognize which methodology will be appropriate for the research topic.

The research methodology intended for this study is anticipated to be capable of providing data analysis, which will be relevant to the title of investigation. In business, budgets are prepared from sales, other revenue sources, prices, recurrent costs, investment or project costs, taxes and other deductions. Projected performance is captured through gross margin analysis and cost and profit estimates. In the oil and gas industry, the appraisal of field development projects are based on reserve estimates, production volumes, tax rates, tax credits, capital or oil allowances, other fiscal incentives and operating and capital expenses.

During the life of oil and gas fields, the fiscal taxation regimes that will prevail are dictated by the host country government policy and are not totally predictive throughout the life of the field. Hence, most research has tended to be probabilistic. This particular research intends to add to knowledge through a stochastic approach though with deterministic elements. The likely effect of fiscal taxation on profitability using financial regression modelling of Nigeria's oil and gas actual figures, as against projected figures which other researchers have concentrated upon, is a key part of this research analysis. The data will capture actual 1970 – 2002 total national production, royalty, cost, revenue and profit figures for all companies operating in the country.

It needs to be mentioned that this approach is not commonly in use in the oil and gas exploration and production industry researches. This is largely due to the sensitivity of unit production cost and some other financial figures (such as tax revenue), and the extreme reluctance of both host governments and operating companies to make these actual figures public. This is particularly the case with the developing economies like Nigeria where financial transparency is poor. A study of this nature is desirable because

there has not been any other such research on Nigeria, based on actual figures. The beauty of this research is that it will likely trigger the comparison of the projected outcome at the outset of exploration, development and production, with the actual level of profitability in further research.

At a recent World Bank forum, Johnston, (2002) stated that over-optimism in oil price estimates, estimating prospect sizes (i.e. reservoir volumes and therefore production volumes), estimates of success probability and cost and timing estimates are the key problems facing tax policy design and therefore do not allow correct determination of operating companies' profitability. This investigation may corroborate the above comments and add empirical evidence to available knowledge in this field.

It is intended that the methodology will guard against trying to answer the wrong questions. That is, involving issues that are not part of the title of investigation; it will also avoid making suggested solutions or drawing inferences, just with the aim of fitting the available data, when they do not substantiate the result of analysis.

The methodology adopted for this research, after the initial and extensive literature review of relevant academic work, on the different aspects of the title of investigation includes the following:

- i. Identification of relevant data
- ii. Identification of data sources
- iii. Design of data collection processes
- iv. Data collection
- v. Data collation, analysis and reporting

- vi. Proposition of hypotheses
- vii. Hypotheses/model testing
- viii. Conclusion

For this part of the research, data analysis will be essentially quantitative, including descriptive statistics and statistical inferences. It is also intended to be evaluative, deductive as well as inductive. It is deductive in that there will be hypothesis formulation or propositions. Similarly, it will be inductive because of the qualitative aspect of the methodology, which will serve to stimulate or provide direction on the probable hypotheses to be proposed. That is, the interpretation of information deduced from the interviews will serve to induce hypothesis proposition.

7.1 Identification of Data

There are two main aspects to the study. These are:

1. Separation of Ownership and Control, using an indicative measure such as contract types.
2. Fiscal taxation as a form of government control.

As earlier discussed in the literature review, the corporate governance aspect is intended to look at the structure, policy and framework of corporate governance – the separation of ownership and control in Nigeria's oil industry through the two main contract types, and its impact on the financial performance of the companies. The aspect on fiscal taxation (government control) looks at the fiscal policy framework of taxation, its evolution over time and how such regimes affect the economics of the oil and gas exploration and

producing companies, with particular reference to the taxation of oil and gas exploration and production.

The Separation of Ownership and Control

The kind of data expected to reveal the overall corporate governance structure, policy framework, and therefore its practice will be too unwieldy for a single study. Therefore, the aspect that will be employed for the purposes of this research will be indicative of the corporate governance structure in the country's upstream petroleum sector. The particular area chosen is separation of ownership and control and how it affects economic performance, if at all. Data will also be sourced on the following issues:

- a. Equity ownership structure. This data will examine the share ownership and the structure of holdings, and it will help to determine the type of control in place in the companies.
- b. Companies' financial figures e.g. cost of production, revenue receipts by government from oil and gas sales. This data will include revenue, royalty, cost, taxes paid and profit levels. They will form the set of variables with which to deduce the economics of operating in Nigeria.

Based on the relationship between corporate equity structure and control, it is apparent that control is expected to be vested in those who own larger proportions of a firm's equity. Hence, where the contract type chosen by the host government concentrates equity holding on a particular joint venture partner or the host country, control will be deemed to be vested in such a majority shareholder. A variable such as contract type can therefore be used as a proxy for the separation of ownership and control. The study therefore examined the economic performance of the oil companies under the contract types chosen

by the host government of Nigeria. While the joint venture represents a situation that gives the government a portion of the equity, the production sharing contract type make one hundred percent equity retention possible for the host government. Given that the government is not involved in the daily management of the oil companies, there is therefore a separation of ownership and control as the joint venture operator or the company/contractor (under a production sharing contract) is solely responsible for the management of the company.

The selection of companies whose data will be employed for the purpose of this research is based on contract types under which the companies operate, and on the significance of the companies in the overall picture of the entire upstream sector of Nigeria's petroleum industry. In Nigeria, there is only one international company in production and operating the production sharing contract type. All others operating the production sharing contract type are still in the exploration stages. This therefore makes the data from this company significant for selection. This producing company will be selected as representative of the production sharing contract type. The remaining five international companies are operating under the joint venture contract type, and two will be selected as representative of the joint venture contract type. These two produce about 60% of Nigeria's annual total oil production. All three selected companies are together responsible for about 65% of Nigeria's annual total oil production. Though desirable to have figures for other companies, the sensitivity of such data has prevented the sourcing of such data. However, figures from these three companies, which jointly represent more than half of the country's production, and with one of the companies being the largest producer, make the data set representative of the industry.

Fiscal Taxation

The definition and scope of fiscal taxation as a form of government control with respect to this study, refers to the linking of economic performance with the tax structure, i.e. the cost and profitability level of the companies vis-à-vis the tax and royalty rates, both of which represent 'Government Take'. 'Cost per barrel' and 'gross margin' are used as the key dependent variables for measuring this level of economic performance.

Data Sources and Data Acquisition

The required data related to the above is essentially from secondary sources. Secondary sources refer to available data in literature, journals, publications and company annual reports on any of the areas of interest in measuring the level and structure of ownership and control in the companies and country. The impact of fiscal taxation on the companies' economic performance will also be assessed using similar secondary data.

7.2 Data Analysis and Reporting

This will involve data processing, tabulations, descriptive statistics, interpretation and discussion of results. Where data is deficient, there may be a need for estimation. The analysis seeks to identify any determinants representing the separation of ownership and control and fiscal taxation and upon which the variables (i.e. economic performance variables/indicators) depend. The major software for data collation, storage, retrieval and reporting is Microsoft Word and EXCEL, while data presentation will employ graphical displays of data, tables and other presentation methods including PowerPoint software. The econometrics software EViews is also used in the estimation. Data analysis will be predicated on both descriptive statistics and regression analysis.

7.3 Interviews Conducted in Nigeria on Oil and Gas Fiscal Taxation Policy Formulation in Nigeria

In the proposed methodology, it is important to include a qualitative aspect that provides additional information on the background of the Nigerian oil industry, and assist in the building of relevant hypotheses. For the purpose of sourcing such information, interviews were conducted. Three interviewees were chosen based on their knowledge of and involvement in the development and Nigeria's oil and gas fiscal policies. Their experiences span the entire history of the industry in Nigeria. While two of them have recently retired from service, one of the interviewees (Alli, O.R.) has about twenty two years experience in the management of oil and gas exploration and production in Nigeria. He is the current Manager, Planning at National Petroleum Investment Management Services (NAPIMS), the oil and gas investment management arm of the Nigerian National Petroleum Corporation (NNPC). He was promoted General Manager in June 2004. Adetunji, S.A was chosen as an interviewee because of his involvement with the Ministry of Petroleum Resources, where he was at one time the Director of the Department of Petroleum Resources. His entire thirty two years career was spent in the petroleum industry. He retired as the Group General Manager of NAPIMS in 2002. Oladele, O.A.R was chosen as an interviewee because of his experience and global knowledge of the industry, having worked with ExxonMobil in the US. For about twenty eight years, he worked in various management positions of NNPC, including the Group General Manager of NAPIMS, and retired in 2001 as Group Executive Director of NNPC. Out of the five officers intended for interviewing, the three people mentioned above were eventually interviewed as they were considered to be most knowledgeable and experienced. The other two, though knowledgeable but occupying lower management,

they do not have as much industry experience as those interviewed. Eventually they could not be interviewed because they were unwilling to grant interviews without official consent from the government. When the government's consent was not forthcoming, they declined to be interviewed. Though one of those interviewed is still a serving officer, he accepted to be interviewed while we awaited the government's consent. It is however satisfying that the three interviewees are widely known to be highly knowledgeable and to possess vast experiences about the Nigerian oil and gas industry. The interviews were arranged through telephone calls and all of them willingly participated. The main purposes of the interviews are to provide information on the factors that guided the formulation of Nigeria's fiscal policy at various times in the past forty years, and the suitability of the policies for the economic performance of the international oil companies operating in Nigeria. The interviews were semi structured, and intended to compensate for inadequate available literature on the Nigerian oil industry. The interviews were conducted at the interviewees' offices in Nigeria, and were all recorded on three mini-cassettes. A transcription of the interview recordings are as presented below.

Factors Influencing the Development of Oil and Gas Fiscal Policy in Nigeria

Interview with Engineer O.R. Alli (Planning Manager, Nigerian National Petroleum Corporation (NNPC-NAPIMS) held at Lagos Nigeria. April 16, 2003.

Q. Before the influence of the Organization of Petroleum Exporting Countries (OPEC) and before independence in 1960, what factors accounted for Nigeria's fiscal policy?

A. There was no clear-cut policy then, neither was the policy dynamic in that revenue generation was the key factor upon which the policies were based. Britain was instrumental to such policy formulation, in that given the presence of British international oil companies (IOC) e.g. SHELL, their contributions were not totally in Nigeria's best interest. Since 1960, we have been building our fiscal regime and with experience it's more dynamic every time it's revised.

Q. What was OPEC's influence on the fiscal policy formulation?

A. It was to encourage member states to take more interest in the monitoring of the operations of the international oil companies. This is what led to additional equity being acquired in ELF and Nigerian Agip Oil Company (NAOC) by the government in 1973 and 1975.

Q. Why was the initial petroleum profit tax law operated for long before its provisions were changed?

A. Operators do have influence on the policy formulation but Nigerians are the ones responsible for changes in the fiscal regime, it was left unchanged until the country saw the need for amendments.

Q. Why were the production sharing contract (PSC) terms very generous initially?

A. They were generous because government did not want to spend money on very risky exploration and production. It is normal to have a more relaxed regime at the outset and it is not restricted to PSC only but also noticeable in the initial stages of the joint venture (JV).

Q. What led to the adoption of a Memorandum of Understanding (MOU)?

A. It was brought about when the international oil companies refused to lift oil because the prices given them by producer governments were higher than the market price. This led to the MOU, which was to help Nigeria increase exploration and production, and help Nigeria to lift her equity of the production that could not be lifted by the country on her own.

Q. What do you think of the North Sea Model?

A. It is okay for a country with few oil fields, but may be too cumbersome accounting-wise e.g. for companies having thousands of fields operated by a single company, we do not have the capacity for that yet in Nigeria. It does not allow marginal fields to survive. In Nigeria we have consolidated taxation and not field by field taxation (as is the case in the North Sea), which is what is keeping the operators to keep operating the small fields. The field taxation in the North Sea however generates more government revenue. On royalty removal, the UK still makes companies pay other taxes despite the removal of royalty. In Nigeria, royalty serves the purpose of revenue generation for the states and petroleum profit tax to the federal government.

Q. In retrospect should Nigeria have used PSC and not JV given the cash call problems associated with the joint venture contract type?

A. Even in PSC, you still have to pay for the cost of operation, though not immediately, but you pay later and sometimes with interest. And you may not get profit but only royalty and petroleum profit tax e.g. in the case of Ashland, the government did not get anything for a very long time. Furthermore, I do not agree with the replacement of joint

venture by production sharing contract because we get between \$2.0 and \$2.7 per bbl. as profit margin from government equity oil, in addition to petroleum profit tax and royalty.

Q. Doesn't cash call delay exploitation?

A. With this regime this is being addressed, to reduce cash call arrears from \$600 million in 1999 which is today only \$100 million (2001). The genesis of cash call arrears is deliberate budget overrun by the operators. The government had always paid up to the approved budget limit. To forestall budget overrun, government now insists on taking a first charge on next year's budget, with the over run. Cash call paid by international oil companies is from their oil share revenue. This is what government is also now trying to adopt i.e. separate the cash call (seed money) from the oil proceeds. That way, there will no longer be cash call problems.

Q. Looking back would you have done things differently?

A. Yes. I would have advocated stricter budget discipline and canvassed for more international investment to reduce government financial commitment, particularly by employing PSC for the risky frontiers and later converting the concession to JV up to an earlier agreed limit and level of production. I would also prefer lease buy back.

Q. How would you advise a new entrant to the oil business?

A. Take the example of Agbami field, before exploration, Famfa sold 40% to Texaco and when huge reserves were found by Texaco Nigeria Ltd., we can now buy into it (40%) when commercial reserves was found as previously agreed, leaving Famfa with 20%. This is a good fiscal policy that the government should embrace to reduce its cash commitment

to a single industry and be able to spread its financial resources to other sectors of the economy.

Q. Should Nigeria have gone into gas exploration and production much earlier?

A. Nigeria should have started gas exploitation sooner. Gas operation boosts the economy. However its exploitation depends on the industrial developmental level of the country. Without much local consumption, gas exploitation is difficult. At the same time its exploitation provides additional revenue that can accelerate the economic development. So, it is like the case of the chicken and the egg, which one comes first. Penalty for gas flaring did not stop flaring, though the monetization of gas led to more exploitation and less flaring.

Q Which of the fiscal taxation systems do you prefer?

A. The policy depends on the objective of the country. For some countries revenue from oil/gas is a substantial part of the gross national product, and for some it is not. This is a critical factor in the choice and adoption of fiscal taxation policy for oil and gas exploration and production.

Q. Why has Nigeria retained its state owned (national) oil company, the Nigerian national petroleum corporation (NNPC) despite the scrapping of national oil companies by other counties?

A. NNPC ensures the management of government's investment for profit maximization, .e.g. to ensure true value added as may be claimed by the oil companies, which are not as truthful with their stated cost of operation as may be expected. They are known to overstate the expenses, which require the continued existence of NNPC-

NAPIMS to scrutinize. The political reasons for keeping NNPC, is not dispensable, however its benefit is to salvage the cost of production.

Q. Despite the political instability associated with Nigeria by the international community, petroleum operations seem to be largely uninterrupted. What do you think is responsible for this? Would you say it has to do with generous fiscal taxation policies?

A. The reasons include the realization by the international oil companies of the need to keep off partisan politics. Secondly, the oil companies are assured of government's commitment to the industry and thirdly, the government keeps to its obligations or contract terms.

Q. Should production sharing contract replace the current joint ventures?

A. No, given that those ventures have gone beyond the risky exploration part that requires international risk sharing and investment.

Q. How did you find yourself in the oil industry?

A. It was influenced by the country's oil boom of the early 1970s.

Q. Do you agree that Nigeria lacks the capacity to supervise the activities of the various operators in the upstream industry?

A. Maybe in the previous years, say ten years ago. Not any longer are we handicapped to supervise the operators. Most of our staff are trained in the universities both locally and foreign. A lot too has been done by the operators, to train our staff through the joint venture training programs. For example, Shell and NAOC have schools for retraining Nigerian graduate engineers and geo-scientists joining their companies.

Q. Has fiscal policy been used to address the improvement of local technical know how?

A. A 2.5% tax on the oil companies' assessable profit (education tax) has been imposed to assist petroleum development through the Nigerian Petroleum Development Fund. This is a form of fiscal policy to address the issue.

Q. Would you agree that the international oil companies have exploited Nigeria's low capacity or industry knowledge earlier on, in denying the country some of the economic rent due it?

A. In Nigeria, both the capital expense and operating expense now are about 50% each. The capital expense is properly monitored given the World Bank type of procedures in place. These include:

- Open contract advertisements,**
- Technical proposals,**
- Open technical bidding for technical pre-qualification,**
- Price bidding,**
- Selection of the lowest, since technical competence is already assured before the bidding.**

For the operating expense, it is slightly more difficult to monitor the operators since it is more of internal transactions for the operators. What is done is to audit the costs afterwards. With additional staffing the problems will be reduced.

Q. What is your opinion about the desirability for fiscal policy changes to address the problems of leakages in oil revenue, whereby not all the revenue accrues to government, given accusations of mismanagement of funds by government officials?

A. Today, good. The internal controls are very much in place. This kind of money can only come from crude oil sales. Today, every sale is now notified to the Central Bank of Nigeria (CBN) and the management is not by NNPC but by CBN. Once money is paid into this account, NNPC is allowed to withdraw the associated cash call while the balance is left for the CBN to manage on behalf of the Nigerian government.

Q. To what extent has the policy of payment of royalty in kind affected the revenue generation?

A. There is no payment of royalty in kind in Nigeria.

Q. Currently there is an audit on NNPC account since 1999. Is this on going or ad hoc?

A. It is a yearly audit, and since 1999, the account is audited and there is more transparency since 1999.

Q. Has there being any change in fiscal policy to increase the local participation in the industry?

A. Not much has been done so far in this respect. There is no legislation in this regard. With respect to the marginal fields, the untapped fields have been taken from the international oil companies. Their request for performance bonds is to ensure that indigenous operators comply with pollution prevention operations such that default resulting in pollution, will be taken care of by such performance bonds.

Q. What fiscal policy measure will ensure increased local capitalization in the industry?

A. No policy has been formulated, though the government expects the development of alliances between local and foreign banks in order to source for international finance.

Q. Do you think government should have scrapped the signature bonus for the indigenous operators?

A. Yes and no. Given the purpose of ensuring seriousness among potential lease holders, there is need to retain signature bonus.

Q. Why is Nigeria still borrowing so much despite its huge natural resources?

A. Improper allocation of funds is a key factor, contract inflation is another reason.

Q. Why has Nigeria not had an oil stabilization fund?

A. This has not been possible due to general poor funds management.

Q. To what extent has frequent changes in government affected the industry with respect to investors' confidence?

A. For truly genuine investors who deal directly with government according to the rule, they always have their contracts retained by succeeding governments.

Q. Tax administration seems to have suffered from poor staffing, poor staff remunerations, poorly qualified staff, etc. To what extent has this affected the fiscal policy formulation in Nigeria?

A. It is true the tax administration sector is not properly staffed and this allows the international oil companies to take advantage of them. They do not even receive a fraction of what tax accountants get in the international oil companies. E.g. the total remuneration of the chairman of Federal Inland Revenue Service (FIRS) is nowhere near that of a middle level tax accountant with the international oil companies, who has spent

18 years in the industry and earns N600,000 (£3000) per month after tax while his counterpart of similar years of qualification earns about N60,000 (£300) at most. Such a situation allows for corruption and creates a situation of leakages in government revenue.

Interview With:

Engineer S.A Adetunji (Retired Group General Manager, NNPC-NAPIMS) held at Lagos, Nigeria on April 18, 2003.

Q. Which arm of government was initially responsible for the management of the petroleum industry in Nigeria?

A. Ministry of Finance, Inland Revenue and Ministry of Petroleum Resources were the three ministries running the various aspects of the upstream fiscal policies at the beginning of the petroleum industry in Nigeria. The royalty aspect was run by Ministry of Petroleum Resources, Ministry of Finance was running the Exchange Control and Banking Regulation, and so there was no central focus. Hence fiscal policy incentives were not centrally coordinated. E.g. the Ministry of Finance wanted the old Memorandum of Understanding (MOU) which modified the petroleum profit tax to be formalized, while the Ministry of Petroleum Resources said it was an interim arrangement.

Q. How did the UK influence the early years of Nigeria's fiscal system?

A. By the time the industry started, or came on-stream fully, Nigeria was already a republic. The traditional industry operator in Nigeria then SHELL, started as a monopoly. Shell's position was however eroded with the influx of the American international oil companies into the country. The fiscal arrangement started with borrowing, and the policies of OPEC countries influenced the fiscal policy more. Nigeria joined OPEC in

1971 and most of the policies were fully implemented. Prior to that the international oil companies dictated to the government what they wanted in terms of dictation of price and conditions of investment. Since then, crude oil prices, investment parameters etc. were formulated and other fiscal policies were managed by government in terms of price, capital allowance and investment parameters.

Q. Did Nigeria have a better fiscal policy, more favourable to the country, before the capital was brought in?

A. The international oil companies came in to maximize their investment but were caught up with the OPEC revolution when the producing countries decided to assume control of their resource.

Q. Why was the PPT then left for so long before it was changed for the first time since 1959?

A. Though not changed, the oil price was high enough for adequate revenue generation.

Q. In 1973, Ashland Ltd. signed a production sharing contract despite the existing joint ventures whose operations were considered okay. Why was this and why was the production sharing contract terms so generous?

A. At that time production sharing contract was novel and was an attraction for us as a non-financial involving option for exploration, so the country was gullible to the investors asking.

Q. Why then was the MOU signed with guaranteed margin to the joint ventures if the production sharing contract was attractive?

A. At that time, there was oil glut and there was a need to stimulate exploration not only on margin but also on reserve addition bonus for new discoveries and for certain levels of exploration investment capital.

Q. Would you then have preferred PSC to JV if you could recall the past and reformulate Nigeria's fiscal policy considering that there are no cash calls?

A. Yes, in that we would not have had any financial commitment. Nigeria generated so much revenue due to the OPEC revolution. Unfortunately it was not properly allocated, in that government did not see why it should not be involved in this critical sector of its economy, hence the continuation of joint venture rather than allowing the investors to commit their funds to exploration through production sharing contract.

Q. Why has Nigeria not paid enough attention to gas? Could it be because there was enough revenue being generated from oil?

A. Yes. Precisely, that is why. Though a liquefied natural gas plant was planned in the 1960s to be established together with SHELL, unfortunately, about that time, the North Sea gas was discovered and it dampened the interest.

Q. The British national oil company (BNOC) has been scrapped. Why is NNPC still in existence?

A. The British can afford to scrap BNOC given that they have other companies that can represent their oil interests while all that Nigeria has is the NNPC. Without NNPC all the country can have is fiscal revenue without actual involvement in commercial activities in the oil industry and its spill over effect on the entire economy. It is proper to retain NNPC

as an upstream sector while the downstream sector is scrapped, now that the technology is more commonplace with a lot of Nigerians involved.

Q. Should Nigeria change to production sharing contract totally?

A. I would have preferred that, but for our limitation in scrutinizing and ascertaining costs, given that the PSC operators are totally on their own in terms of management. Also, there is the problem of doing away with petroleum products price subsidy because the allocation of crude for local refining at prices lower than open market price will have to stop. Another problem with PSC is that the government's intention to attract foreign investors into the refining sector will be difficult, since you cannot force the producer to sell locally to the refiner. This however is a key attraction for the refiner in that they will not have to construct terminals for crude receipts. The operators will rather take the crude to meet their external commitments than leave it for local refiners even when the refiner wants to pay international prices. The issue of reduction of their investment capital is therefore the only other likely attraction for them to set up refineries in Nigeria. There is no certainty they will be attracted. It is only through the government's share of joint venture crude that such guarantee of crude supply can be possible. As government cannot sell crude to the foreign refiners at subsidized price as it does to NNPC refineries, there is therefore a need to commence selling crude to NNPC at international prices, which is why fuel price increases are inevitable in Nigeria.

Q. Has the predominance of the IOC over technology affected the fiscal policy formulation?

A. Yes. The low activity in fiscal regime planning by Nigeria has been hindered by low technological know-how compared to the IOC.

Q. To what extent has this technological disadvantage affected the level of supervision of the international oil companies by Nigerian officials?

A. Truly this has affected the supervision. There is also a manpower shortage and poor data availability, which in effect hampers policy formulation. This shortcoming is more aggravated by rapid labour turnover of trained and experienced personnel and would have somehow led to ineffective revenue collection for the government.

Q. How educationally capable is the country to formulate the right fiscal policy for the industry?

A. There is availability of right educational background but not enough of personnel.

Q. Are Nigerian Universities doing enough in terms of developing the industry?

A. They are trying their best given the circumstances, though the industry is not cooperating fully as the international oil companies still want to conduct all of their research in their home countries. Nigeria has no national petroleum policy and that is dangerous. There is no policy on exploitation of this non-renewable resource. e.g. there is no national reserve of petroleum resource such that, for example, not all proved reserves are made available for bidding and immediate production in order not to hastily exhaust the available resources of the country.

Q. How has the non-availability of national petroleum policy affected Nigeria's fiscal policy formulation?

A. The availability of such a policy would have allowed the proper coordination of the formulation and supervision of the fiscal policies. Though the difference in the geological

formations and conditions affect policies, yet there would have been better coordination if we had a national petroleum policy. The terms of lease life, exploration period and lease sizes etc. would have been better formulated.

Q. How has the IOC contributed to the industry's development?

A. They claim that since government takes 85% of profit as tax, then it should be responsible for infrastructural provision, therefore they are not interested in any other significant contribution socially.

Q. What kind of fiscal policy would you recommend if you were just starting as a producing country today?

A. Instead of policies meant for revenue generation mainly it should be such a policy that will favour backward integration e.g. setting up a refinery as production attains a given level.

Q. How would you think fiscal policy is responsible for revenue loss due to accounted crude production or sales?

A. Payment of royalty in form of crude oil is a leakage in revenue when the right price is not used to compute such value of oil. It creates a distortion in the revenue profile.

Q. How would you rate the internal control in NNPC?

A. Today things have changed compared to previous years. There is more openness than before during the military regimes.

Q. The issue of resource control will necessitate fiscal policy reformulation. What is your opinion?

A. This should not be allowed because there will be no end to agitation for resource control in the country?

Q. Is there continuity in lease ownership in Nigeria?

A. There is continuity.

Q. Why has there been stability in the industry despite political instability?

A. Because government cannot afford to breach international agreements, even the military governments do respect them.

Q. Has Nigeria been ascertaining national sovereignty in the industry?

A. To a good extent yes, though the country is hindered by low capacity for supervision.

Q. Is the country's petroleum potential fully met?

A. It is increasingly being met. Once the current attention being given to gas utilization and commercialization is sustained, then it will be fully met.

Q. How would you upgrade the current gas fiscal policy?

A. Gas commercialization is capital intensive hence its utilization is driven by availability of funds. The policy is driven by incentives to attract capital inflow into the country and industry.

Q. What do you think of the current level of revenue being generated?

A. The machinery for petroleum profit tax administration is poor and inefficient, e.g. the ability to independently determine income is poor. Government must deliberately train and equip FIRS staff to carry out its functions. There is a need for structured training programmes.

Q. Is the policy for environmental protection sufficient?

A. No and there is room for improvement.

Q. How long were you in the oil industry?

A. A total of 32 years. I was party to most of these policies.

Interview With:

Engineer O.A.R Oladele Retired Group Executive Director, NNPC-NAPIMS) held at Lagos Nigeria on April 18, 2003.

Q. What exactly are the factors that influenced Nigeria's fiscal policy formulation in the earlier years?

A. The theory of Resource Exhaustion Pricing is no doubt a key factor in the formulation of fiscal policy for Nigeria, which in effect is the foundation of maximum revenue generation. Nigeria's PPT is one of the most regressive in the world and the idea is get as much as possible from the prevailing prices of oil and gas. This is not unusual with most developing producing countries. This was not the case before independence but with independence there were adjustments that ensured maximum revenue generation.

Q. Have the fiscal policies been favourable to operating companies?

A. The idea is not really whether they are favourable or not, the idea is to ensure equitable share of profit. In practice, what the operators feel they are not making in terms of profit, they try to gain through inflated cost of operation.

Q. Ashland's PSC could be said to be generous, why?

A. Even if it appears as generous, it was meant to attract the first PSC to the country, more so, since there are no guarantees of success. Thereafter, the new PSC were not as generous. The deep-water PSC of 1993, had signature bonuses because the risk of exploration was not as high compared with Ashland's, and when compared with the Brazilian deep water production sharing contract, it had progressive production cushioning terms to ensure that the producers recovered their investment, and thereby also making the contract attractive.

Q. How has the formation of OPEC affected Nigeria's fiscal policy?

A. OPEC actually had an impact on every member state in making adjustments to their existing fiscal policy and this led to increased involvement of the host member countries in the oil industry.

Q. Would you suggest a withdrawal of Nigeria from OPEC membership?

A. Given that oil is now becoming a commodity, whereby there is adequate supply now as compared to earlier thinking that it is short. Unfortunately OPEC is yet to come to terms with this realization. The UK, Norway and Russia are not member states of OPEC, for instance, and are doing fine. For a country like Nigeria with more emphasis on deep offshore exploration, the result is high cost oil produced with investment borrowings. With such a situation, why would the country constrain its production with an OPEC production quota? With the likely production of Iraqi oil after the resolution of the

conflict beyond Iraq's current OPEC quota, the price of oil may slump. Furthermore, with increasing reduction in Nigeria's low cost oil from production disruptions as a result of communal clashes and agitations from producing communities for resource control, it may be in the long term interest of the country to withdraw from OPEC.

Q. How should the government review the existing fiscal policy on the deep offshore?

A. This is already in existence. If the royalty is abolished, then sovereignty is relinquished. However, there will be a need to have a comprehensive fiscal policy that is not counter-productive, but sufficiently dynamic to address each operator's need. There is the Petroleum Profit Tax Act, the MOU, regulations, production-sharing contract decrees for deep-water; amended tax regimes for marginal production sharing contract fields, some independent producers do not have a fiscal system that addresses their peculiar situation. The gas fiscal system, AGFAR (Associated Gas Fiscal Incentive) is considered by the World Bank as over-generous. Though it was meant to attract more investment into gas, it should be formulated such that there is a balance and not a creation of disincentive for the competing fuel, that is, crude oil. A more comprehensive Petroleum Profit Tax Act is important such that, (a) the stage in the life of the field, (b) adaptation to changing international situation, (c) cost measurement and monitoring for exploration or development drilling, e. g if it's a dry hole etc., are considered.

Q. Why was the PPTA not amended for 17 years and why did the government acquire additional equity in Elf Petroleum and Agip in 1973?

A. In 1959, Shell was the only operator in the country and this was changed to remove the monopoly. In 1971-73, the Nigerian national oil company (NNOC) was established and the staff started acquiring the expertise with which to recover lost revenue based on the

existing policy. In addition to this is the influence of OPEC. Between 1973 and 1986, there was another review which removed the official selling price and replaced it with the offset selling price to ensure adequate profitability for the operators. That is a response to the market situation that changed the tax base from a high level to a more realistic level. The current situation whereby the MOU is renewed every five years is not ideal. The maintenance of the status quo whereby the operators are retaining the large acreages should change because with competition, other operators can be brought in. It's a case of a changing world. Today some of the big players in the industry are no more, e.g. Anadarko, Ocean Energy, BHP, and Lasmo etc. There is a rather unfortunate permanence that seems to have been guaranteed for the operators in Nigeria. With respect to operator monitoring capacity, the FIRS cannot effectively oversee the operators, to the extent that a company like Shell will refuse to provide its data and FIRS cannot independently ascertain it nor thoroughly supervise and determine taxable profit of the operators. For example, this is one of the reasons why the value for money audit by the government has not succeeded. Some examples of unscrupulous cost items are home office overheads for procurement, two to three companies maintaining different portions of same pipeline. There is therefore the need to restructure the joint operating agreement as part of the fiscal policy, particularly the issues of procurement.

Supervisory capacity is also low in terms of the number of personnel required, and the competence in the knowledge and formulation of fiscal policy for the oil industry.

The incentive, facilities, education and knowledge of concept of the fiscal system of the oil industry is lacking and needs to be upgraded.

Q. In the UK, the BNOC has been scrapped, but the NNPC is still retained, why?

A. NNPC can exist but in a modified form. With about 57 % (1.4 million barrels per day) of total production (2.0 million barrels per day) to the government and with 450,000 barrels of that for local refining, when the country's low cost oil from inland production is further reduced, there will be dependence on high cost oil from offshore production. This will result in an inability to feed the local refineries owned by government. It is only the likes of BP, a proper exploration and production company owned by the government that should be retained for ensuring security of supply for the country.

Q. Should there be a change from JV to PSC?

A. I think the country should adopt the PSC. Going by the model in Ecuador, the government retained the right to acquire equity after the operator has discovered oil without any financial commitment in the risky exploration stage. This is a form of PSC that Nigeria should adopt too.

The fiscal policy should be influenced not only by income generation, but by other factors like, not committing fund to exploration stages in production sharing contract fields, and having the right to buy into the business at a given production level, having a strong taxation and tax supervisory system for revenue generation, value addition in-country (competence transfer, internalization of asset generation base, production capacity of asset within the country), internal security in order to move the economy forward. These should be the factors influencing the country's fiscal policy.

Q. What model would you prefer for Nigeria?

A. Ecuador's model in terms of cost monitoring and technology transfer, combined with the Norwegian model in terms of local input terms and a tax rate that maximizes revenue, would be the ideal fiscal policy model for Nigeria.

Q. What are the new policies in the industry?

A. The government is now placing all the new fields under production sharing contract.

Q. Why has there been stability in the industry despite political instability?

A. The stability is not total as perceived. The operators face a lot of problems with the producing communities. They are forced to pay compensations to local communities in order to remain in production.

Q. What fiscal policy change would you wish to see in order to address the problem of inadequate supervisory capacity in the industry?

A. Companies can be forced by legislation to undertake personnel exchange; the Nigerian university system should be reviewed in terms of facilities and curriculum to assist the human capital development for the industry. There is a developing relationship between Robert Gordon University and Petroleum Institute, Warri, Nigeria. Local development is the best way to go and it is possible to employ fiscal policy to stimulate this.

Q. What is your opinion of the internal control in NNPC?

A. With the periodicity of audit exercises and financial reporting currently in place now, though at the insistence of the World Bank in its Memorandum of Economic and

Financial Policies regarding contract award, the system has improved. Similarly, there is compliance with the open system of contract award since the last couple of years.

Q. What is your opinion about the policy of paying royalty in kind?

A. This is not to my knowledge. If it is existing, then it is not likely to constitute a leakage as you said, since it will only involve the production sharing contract operations and it will only be paid to the government. Leakages in oil revenue are not a fiscal policy issue, rather a poor supervisory control problem. What is likely is that operators delay payments (within the provisions of the regulations) in order to use the government's money through delayed payment of royalty or taxes, other than this, it will be difficult to cheat on payment.

Q. With the approval of marginal fields for indigenous operators, what has been the driving factors for the fiscal policies formulated, e.g. what do you think of the request for the newly licensed operator to pay large sums to the previous lease holders?

A. The likely problem is that of human capital not adequately developed. It may be waste allocating fields to indigenes as operators. Management skills and technological ability is very important.

Q. Shouldn't the policies for local operators be more favourable?

A. It is reasonable for the former owners to request for guarantees. Even when the government provides guarantees, is there any guarantee that the local companies have the competence to perform?

Q. Why has Nigeria never had a petroleum stabilization fund?

A. The constitution does not allow it, as it allows the distribution of all revenue that accrues to the government. A change of the constitution through the willingness of the country will ensure this.

Q. What is your opinion of oil revenue accounting, do you think the country is being cheated by the international oil companies?

A. The fact is that worldwide, the international oil companies are not known to flout laws. The key issue still borders on poor capacity to supervise and control their operations by the government.

Q. Is there a tilt in Nigeria towards a prudential governance of the petroleum industry, whereby we have fiscal policies that ensure a 'win-win' situation for both parties?

A. Why is Nigeria still borrowing so much from the IMF? It's a question of indiscipline, which tends to portray us as not having the best deals.

Q. Why do we have operators' licenses revoked by succeeding governments?

A. The government has always maintained its commitment to the licensee, and there has been no international oil company whose license was revoked in the history of the country. It has only happened to a few indigenous companies and for specific reasons, while the government is being conscious of not sending the wrong signals to the international community.

7.4 Hypotheses Development

The interviews conducted provide vital information which induced some of the hypotheses. The three officers interviewed are some of the highest and most knowledgeable about Nigeria's oil and gas exploration and production industry. Among the three, there is a total of over seventy five years experience, most of which has been spent in various management positions, as government officers responsible for policy formulation and the supervision of the oil companies. The interviews provide information on historical and conceptual perspectives responsible for fiscal policy formulation by various governments in Nigeria. Additionally, the interviews fill noticeable gaps in the initial literature available on Nigeria's oil industry. Information deduced from the interviews was useful in the formulation of the hypotheses.

In the forty-five years history of Nigeria's petroleum industry, fiscal taxation policy has been driven more by the desire to maximise petroleum tax revenue. While the policies also attempt to take into consideration the level of apportionment of economic returns to the operating companies, the extent to which both of these objectives are achieved forms part of this research investigation, and it is expected to assist in the drawing of conclusions from the data analysis.

Similarly, the policy framework operated by the (OPEC) and its relevance to Nigeria's economic situation is of relevance, particularly as it is sometimes thought that the organisation's aims are no longer relevant in terms of current world economic conditions. At inception, OPEC operated a market share policy until 1975 when at \$40 per barrel of crude oil, a price considered too high, the industrialised countries made deliberate attempts to increase local production, and encouraged non-OPEC member producers to

increase production in order to force a drop in crude oil price. This move not only forced down prices, but OPEC's share of production also fell. (See Table 12). Thereafter, OPEC's policies have been driven by price. The organisation attempts to maintain a price range of between \$18 and \$25 per barrel of crude oil. This policy is predicated on controlled production volumes which are allocated to individual member states. This quota based production policy is being regarded as counteracting free market conditions.

Also, the capacity of Nigerian government officials to effectively supervise the operating companies, and therefore optimize their economic returns with respect to government's economic interest, through control of the companies' activities was suggested by the interviewees to be lacking, particularly when experienced staffs are retired early or the supervisory agencies are short staffed. The inability to adequately exercise such control was also possibly a reason for company based fiscal taxation rather than field based tax system operated in the United Kingdom.

7.5 Proposition of Hypotheses/Model Correction

The above interview excerpts, and in addition my experience in the Nigerian oil industry, having worked with ExxonMobil for ten years and Petroconsult Energy company for ten years, assisted in the formulation of the research hypotheses. The three hypotheses to be tested are:

Hypothesis 1: Contract Type (CT) is a significant determinant of economic performance for oil and gas exploration and producing companies operating in Nigeria.

Hypothesis 2: The Production Sharing Contract type (PSC) in comparison to the Joint Venture (JV) contract type does not optimize the economic performance of oil and gas exploration and producing companies operating in Nigeria.

Hypothesis H₃: Fiscal taxation has a negative influence on Nigeria's oil and gas operating companies' economic performance.

To test these hypotheses, models of the impact of the separation of ownership and control and fiscal taxation as determinants (or not) of economic performance of oil and gas producing companies in Nigeria is proposed and estimated. The regression output is tested for autocorrelation, multicollinearity and heteroskedasticity, using statistical test measurements. Corrections to the estimates are made, where necessary.

The conclusions of this research are derived from the summary of analysis, hypotheses and models proposed. They highlight the relationship between the economic performance of oil and gas exploration and producing companies operating in Nigeria and the separation of ownership and control and fiscal taxation.

7.6 Statistical Methodology

Some of the key data required for analysis in measuring fiscal taxation as a likely determinant of economic performance have to do with financial returns to the companies. My research data were therefore financial in outlook and captured the entire country data for the upstream sector.

The specific type of data that were therefore employed for analysis included:

1. **Production Volumes** – These refer to Nigeria’s annual production volumes of oil as produced by all the oil companies operating in the country as published by the BPAmoco 2003 Energy Statistical Review.
2. **Oil Prices** – These refer to the annual average spot market prices of crude oil as published by the BPAmoco 2003 Energy Statistical Review.
3. **Royalty Rates** – These refer to the charge on oil produced at well head levied on entire production volumes. The rates depend on whether production is onshore or offshore.
4. **Tax Rates** – These refer to the rates of taxation on chargeable profit for different years.
5. **Cost Profile** – This refers to the computed expenses, as a summation of capital and operating expenses incurred during exploration and production by all the companies. The computation was based on one of the major producers’ financial data, as a true representation for all other producers in the country.
6. **Revenue** – This is computed as income from crude oil sales based on production volumes and the spot market annual average prices. It assumes that one hundred percent of production is sold.
7. **Taxes Paid** – These refer to petroleum profit tax chargeable on the profit income of the producing companies.
8. **Profit Before Tax** – This refers to total revenue less cost and royalty before tax.
9. **Profit After Tax** – This refers to revenue less cost, royalty and chargeable tax.

Dependent Variables

The key dependent variables for the financial regression modelling are:

- a. **Unit Cost of Production** – this refers to the cost of producing one barrel of crude oil based on the total cost and total production volume per year.

- b. **Gross Margin** – this refers to the ratio of profit margin before tax to revenue and expressed in percentages.

Independent Variables

The key independent variables are 'government take' (tax and royalty), production volume and contract type. Government take refers to the summation of the revenue that accrues to the host government. In the case of Nigeria and for the purposes of this research, it is defined as the summation of royalty and petroleum profit tax. Contract type refers to the particular set of terms and conditions chosen by the host government as the option preferred to govern the license issued to the oil companies in respect of the exploration and production of the oil and gas in the licensed fields.

Ownership Structure

The equity structure of Nigeria's oil and gas exploration and producing companies in the last ten to fifteen years, depending on available data, was examined to ascertain any relevance. In Nigeria's exploration and producing sector, none of the directors or employees has any shareholding. The management is representative of the major corporate shareholders while no Nigerian employee has any shares in the host country's block-shares. Hence, the control classification is purely dominant majority shareholding by the Nigerian government with an average of 57 % in all the Joint Venture exploration and producing companies. Some of the foreign executives in management or on the Board of Directors may own shares in the international parent company, but their proportion in the Nigerian entity in terms of equity will be too insignificant for analytical considerations.

Table 8 gives an example of equity shareholding in two of Nigeria' Joint Venture companies See Appendix 4 for detailed equity holding.

Table 8: Sample of Changes in Percentage Equity Holding in Nigeria's Oil Companies

<u>Company</u>	<u>% Shareholding</u>			
	<u>Host Country</u>		<u>Joint Venture</u>	
	<u>(HC)</u>		<u>Operator (JV)</u>	
	<u>1971</u>	<u>1979-02</u>	<u>1971</u>	<u>1979-02</u>
ELF	35	60	65	40
ENI (AGIP)	33	60	67	40

In the joint ventures, equity share holding by government enables the government to have a participating interest in such companies. A majority shareholding enables representation on the board of directors and therefore control. Hence, with the joint venture contract type, the government is able to participate by exerting direct influence on the management of the companies. In the examples of the two companies in Table 8, government percentage share of equity increased from 35% in 1971 to 60% in 1979-2002 for ELF Petroleum Company and from 33% in 1971 to 60% in 1979-2002 for ENI (AGIP) Petroleum Company.

All Nigerian JV petroleum companies are state controlled through large and majority block share holding while management is left with another block (but minority) shareholding. In addition to the possibility of control due to majority shareholding, control by government is achieved mainly through committees, such as the Technical

Committee (TECOM) and the Joint Operating Committee (OPCOM), to which JV operators are responsible and the chairmanship of which is held by NNPC as the senior partner on behalf of the government.

Sample Selection

In the first part of the empirical study concerned with the effect of the separation of ownership and control on performance, the sample of firms is limited to the oil and gas exploration and producing sector of the petroleum industry. In all, there are seven such companies operating in the country, which together produce 98% of Nigeria's total annual oil and gas production. The remaining 2% is produced by the government-owned Nigerian Petroleum Development Company (NPDC) and a few indigenous companies. As shown in Table 9, of these companies, only one operates a PSC while the others operate a JV contract.

Table 9. International Oil Companies Operating in Nigeria*

<u>Company</u>	<u>% Equity</u>		<u>% of Total</u>	<u>Contract Type</u>
	<u>Government</u>	<u>Int'l. Coy.</u>	<u>Production</u>	
Shell	55	45	45	Joint Venture
ExxonMobil	60	40	14	Joint Venture
Chevron	60	40	12	Joint Venture
Texaco	60	40	4	Joint Venture
TotalFinaElf	60	40	11	Join Venture
ENI (Agip)	60	40	10	Joint Venture
Addax	100	0	2	Production Sharing
Others**	0	100	2	

**** Including Pan Ocean Oil, NPDC and the indigenous companies.**

*** Source: Nigerian Oil and Gas Vol.10 No.1**

In the Nigerian oil industry, there is no competition amongst the international oil companies once they have been awarded the oil prospecting licence. The only competition is in the bidding stages for the award of the licences. As a result of Nigeria's membership of OPEC, there is a production quota beyond which the country cannot produce. This quota is in turn shared to the oil companies by the government through the Nigerian National Petroleum Company (NNPC). This situation does not allow production by the companies up to their full productive capacity, and gives no room for any form of competition.

Complete data were available for just three of the seven companies over the period of 1988-2002. The period 1988-2002 was chosen as an adequate time interval that captures the period of time the company operating a PSC has been in operation. The key objective of the statistical analysis is to determine any relationship between government equity ownership in each type of contract and the economic performance of companies.

The key independent variable identified as likely to affect control is Contract Type, signifying the level of the government's equity ownership. The effect of this variable on the dependent variables is then analyzed using F and t-test techniques to reveal the significance of the relationship.

In testing the economic performance, the companies' data on the following are employed.

- Production cost per barrel
- Gross Profit : Sales (Gross Margin)

These performance variables were evaluated and presented for the two contract types. For analysis, the effects of the measure of control (contract type) on each of the performance variables were isolated, on the assumption that other factors remained unchanged, therefore observing the classic 'ceteris paribus' assumption.

In the second part of the empirical study concerned with the effect of the fiscal taxation on performance, aggregate data for the period 1970-2002 were used. Regression analysis of the effect of taxes payable/paid by the companies on the level of cost per barrel of oil produced is conducted.

The above highlights that this is a quantitative and analytical method of research, with the research interviews conducted representing the qualitative aspect. As much as possible, the outcome of the research will be devoid of personal opinions. In essence, it is intended as a statistical analysis of economic/financial data, which is referred to as econometrics. Unlike the strictly qualitative method that depends mainly on interviews or social experiments, the effects of variables (consequent on policies) are inferred from statistical analysis of observed outcomes, that is, dependent variables whose values are explained by variations in the policy generating independent variables.

The inclusion of a random error term in the algebraic econometric model is to reflect the influences on the dependent variable that are not observable through this research. That is, there could be some other independent variables influencing the behaviour of the

dependent variable, not captured by this research, nor explained by this model. In the econometric analysis, multiple regression analysis is employed, with a view to obtaining estimates of the parameters of the 'best fit' or regression equation, which will be a geometric representation of the regression model.

The disadvantage of an econometric analysis is that it assumes that the same general equation can be used to describe different socio-economic relationships, which may not be necessarily true. Also, the behaviour of independent variables may change over time and be affected differently by other economic conditions, such that their effects on the dependent variable(s) are no longer along the same pattern. Hence, the reality of the relationships we are trying to establish using econometric models are always changing. Similarly, the methods used to acquire data may affect the behavioural relationship between variables.

In econometrics, problems may be introduced when some significant variables are either omitted or are un-measurable, e.g. the measurement of internal political interest or attitudes such as tribalism or geo-politics. Such attitudes or variables are not satisfactorily quantifiable, and it is such factors that make the research model stochastic, rather than deterministic.

With the above constraints, this analysis, like all financial econometric models cannot be hundred percent definitive but provide a structural identification and explanation of what the explanatory or independent variables are.

The problem of the incidence of simultaneous causation was addressed using appropriate econometric tools.

CHAPTER 8

DATA ANALYSIS

In this chapter, we conduct two empirical studies. In the first, we aim to investigate the effect of the separation of ownership and control (as proxied by the contract type) on the economic performance of oil and gas exploration and producing companies in Nigeria (as proxied by cost per barrel and the gross margin). In the second study, we attempt to analyse the effect of the fiscal taxation (as proxied by government take as a proportion of the oil and gas companies' total revenue) on economic performance (proxied by cost per barrel). In both cases multiple regression analysis is used. The results of the empirical studies form the basis of the conclusions presented and discussed in chapter 9.

8.1 Separation of ownership and control

The data analysed in this section were obtained from secondary sources, particularly as published by the Nigerian Federal Inland Revenue Service, the BP Annual Statistical Energy Review, the US Department of Energy and the individual oil companies. In addition to investigating the influences of the separation of ownership and control, these data were also analysed with a view to investigating economies of scale, and the production and cost behaviour of the companies concerned. Regression analysis was employed to model the relationship between economic performance and selected independent variables.

Secondary data on three oil and gas exploration and producing companies, tagged companies A, B and C, were collected for fifteen years of production (except for company A where only fourteen years of data were available). The companies represent

two major contract types in the global petroleum industry, and the two types of contract in Nigeria. The contract types are:

- i. Joint Venture (JV)
- ii. Production Sharing Contract (PSC)

8.1.1 Data Set and Software

For each company, the data set comprises yearly production volume in millions of barrels, the average annual price of crude oil in US dollars per barrel (\$/Bbl), operating and capital expenditure (in millions of dollars). Companies B and C represent large and small sized producers operating under a JV contract type in Nigeria. Company A is the only company operating under a PSC and already in production in Nigeria. Five IOC and twenty two indigenous companies with PSC licences are not yet in production but are in various stages of exploration.

Due to the sensitivity of this type of data, confidentiality will be maintained; hence specific names of the companies cannot appear in this research thesis. This research data and analysis are contained in tables and Excel files and summarised in Appendix 8. The data analysis was performed using both Excel and EViews.

8.1.2 Analysis

The objective of the corporate governance portion of the research is to investigate the relevance of the separation of ownership and control as a determinant of the economic performance of oil and gas exploration and producing companies in Nigeria. The analysis, therefore, is centred on the link between financial performance, the volume of production (PROD) and the contract type (CT), where financial performance is measured, first, by

the unit cost of production (COST) and second, by the gross margin per barrel (GMPB). The data set used in the analysis is shown in Table 10 with a set of summary descriptive statistics in Table 11.

In order to reduce the impact of inflation, interest and foreign exchange rates on the costs, Gross Domestic Product (GDP) deflators were introduced over the fifteen year period. Given that 85-90% of all capital costs were not only denominated in US dollars, but also sourced from the USA, the US GDP deflator year-on-year was employed and computed based on World Bank base data (1993). The extent of the dollar input was also recognised after discussions with the company officials (see Appendix 9).

8.1.3 Descriptive Statistics

For this empirical study, Table 11 shows summary statistics for the three companies investigated over the fifteen year period (1988-2002). In examining this table, it is noteworthy to remember that company A is the only oil and gas exploration and producing company operating a PSC in Nigeria. Companies B and C represent two levels of production in Nigeria under the JV contract type.

Four main variables are considered in this analysis, namely COST (the unit cost of oil production) and GMPB (the gross margin per barrel) as the dependent variables, PROD (oil production volume) and CT (contract type) as the main independent variables.

Table10: Data Set for Companies A, B and C Used in the Regression Analysis

COST	PROD	GMPB	Log COST	Log PROD	Log GMPB	CT
8.6	7320	4.12	0.94	3.86	0.61	1
10.2	7398	8.34	1.01	3.87	0.92	1
13.8	7410	6.37	1.14	3.87	0.80	1
12.0	7425	6.82	1.08	3.87	0.83	1
12.6	7576	-1.47	1.10	3.88	0.00	1
14.8	4015	-2.08	1.17	3.60	0.00	1
11.9	4163	-3.13	1.07	3.62	0.00	1
12.4	3901	-4.38	1.09	3.59	0.00	1
15.8	3652	-5.03	1.20	3.56	0.00	1
13.1	3597	-8.55	1.12	3.56	0.00	1
13.8	4458	-1.20	1.14	3.65	0.00	1
21.3	5584	5.96	1.33	3.75	0.78	1
17.9	8859	16.52	1.25	3.95	1.22	1
17.6	11501	17.83	1.25	4.06	1.25	1
3.8	43643	0.00	0.58	4.64	0.00	0
3.8	44530	9.34	0.58	4.65	0.97	0
4.0	45625	9.16	0.60	4.66	0.96	0
4.2	46902	11.73	0.63	4.67	1.07	0
4.4	47450	16.19	0.65	4.68	1.21	0
4.8	49092	13.00	0.68	4.69	1.11	0
5.0	48180	11.98	0.70	4.68	1.08	0
5.5	48910	10.45	0.74	4.69	1.02	0
5.9	49640	8.59	0.77	4.70	0.93	0
6.3	50233	9.10	0.80	4.70	0.96	0
6.7	48494	12.11	0.83	4.69	1.08	0
8.1	48333	8.43	0.91	4.68	0.93	0
6.8	57037	1.62	0.83	4.76	0.21	0
5.2	59719	5.98	0.71	4.78	0.78	0
3.6	49441	16.92	0.55	4.69	1.23	0
6.0	2985	19.34	0.78	3.47	1.29	0
6.0	3197	7.16	0.78	3.50	0.85	0
6.1	3386	10.00	0.79	3.53	1.00	0
7.1	3152	14.73	0.85	3.50	1.17	0
8.0	3059	10.45	0.90	3.49	1.02	0
8.3	3187	9.18	0.92	3.50	0.96	0
8.2	3464	6.97	0.92	3.54	0.84	0
8.2	3766	5.98	0.91	3.58	0.78	0
8.2	4094	6.89	0.91	3.61	0.84	0
7.5	4837	10.34	0.88	3.68	1.01	0
6.9	3155	7.70	0.84	3.50	0.89	0
9.4	3807	2.39	0.97	3.58	0.38	0
5.8	2956	5.80	0.76	3.47	0.76	0
7.4	2893	16.63	0.87	3.46	1.22	0
15.2	1724	12.55	1.18	3.24	1.10	0

Table 11: SUMMARY DESCRIPTIVE STATISTICS

Company	Production Volume (MBbl) (PROD)			Cost/Unit Production (\$/Bbl) (COST)			Gross Margin (%) (GM)		
	A	B	C	A	B	C	A	B	C
Mean	5941	49149	3311	14	5.2	7.9	31	56	43
Median	5581	48494	3189	13.4	5	7.5	29	62	47
Std.Deviation	2510	4222	681	3.3	1.3	2.3	8.6	15	13
Minimum	2255	43643	1724	8.6	3.6	5.8	15	13	18
Maximum	11501	59719	4837	21.6	8.1	15.1	44	70	62
Sample Size (Yrs.)	14	15	15	14	15	15	14	15	15

i. PROD (Production Volume)

From the descriptive statistics, company B's average production for the fifteen years examined was eight times more than that recorded for company A: 49,148,676 Bbl (company B) compared to 5,940,903 Bbl (company A). Company C had the lowest production average of 3,310,789 Bbl. The standard deviations for the three companies' production are 2,509,520 Bbl (company A), 4,222,026 Bbl (company B) and 680,894 Bbl (company C), which for company A may appear excessive given the standard deviation of company B with eight times its production and company C with 79% of its production. The high standard deviation indicates a high degree of variation in the production data over the fourteen-year period.

ii. COST (Unit Cost of Production)

Company A recorded the highest mean cost at \$14/ Bbl compared to averages of \$5.2/Bbl and \$7.9/Bbl for companies B and C respectively. Company A also recorded a much higher standard deviation of \$3.30/Bbl than those of companies B (\$1.3/Bbl) and C (\$2.3/Bbl). For all the companies, operations are from onshore and offshore. Also, the

quality of crude oil produced by all the companies is the same. The lowest cost for company A (\$8.6/Bbl) is higher than the highest cost for company B (\$8.1/Bbl) and about 50% more than the lowest cost for company C (\$5.8/Bbl) whose production volume is 79% that of company A.

iii. GMPB (Gross Margin Per Barrel in Percentages)

Company A recorded the lowest average minimum and maximum gross margin per barrel while company B recorded the highest. The standard deviations of the companies' gross margins per barrel are 8.6%, 15% and 13% for each of companies A, B and C respectively.

iv. Inferences from Descriptive Statistics

The descriptive statistics suggest a number of conclusions, among which are:

- a. Company B is the largest producer and has the lowest unit cost of production. This suggests that there may be economies of scale in the industry.
- b. Company A has a higher production volume than company C, but recorded a higher unit cost and lower gross margin than company C. This may suggest a less efficient management in company A than in company C.
- c. For the three companies examined, cost-production functions are shown in Figures 1-3 and clearly do not conform to the shape of a typical long-run average cost curve (see Hardwick et al, 1999, p. 175), as represented in Figure 4. This suggests the occurrence of diseconomies of scale, particularly for companies A and C. For company B, costs started to fall only after achieving 59.7 million Bbl. Cost continued to rise before and after 50 million Bbl.

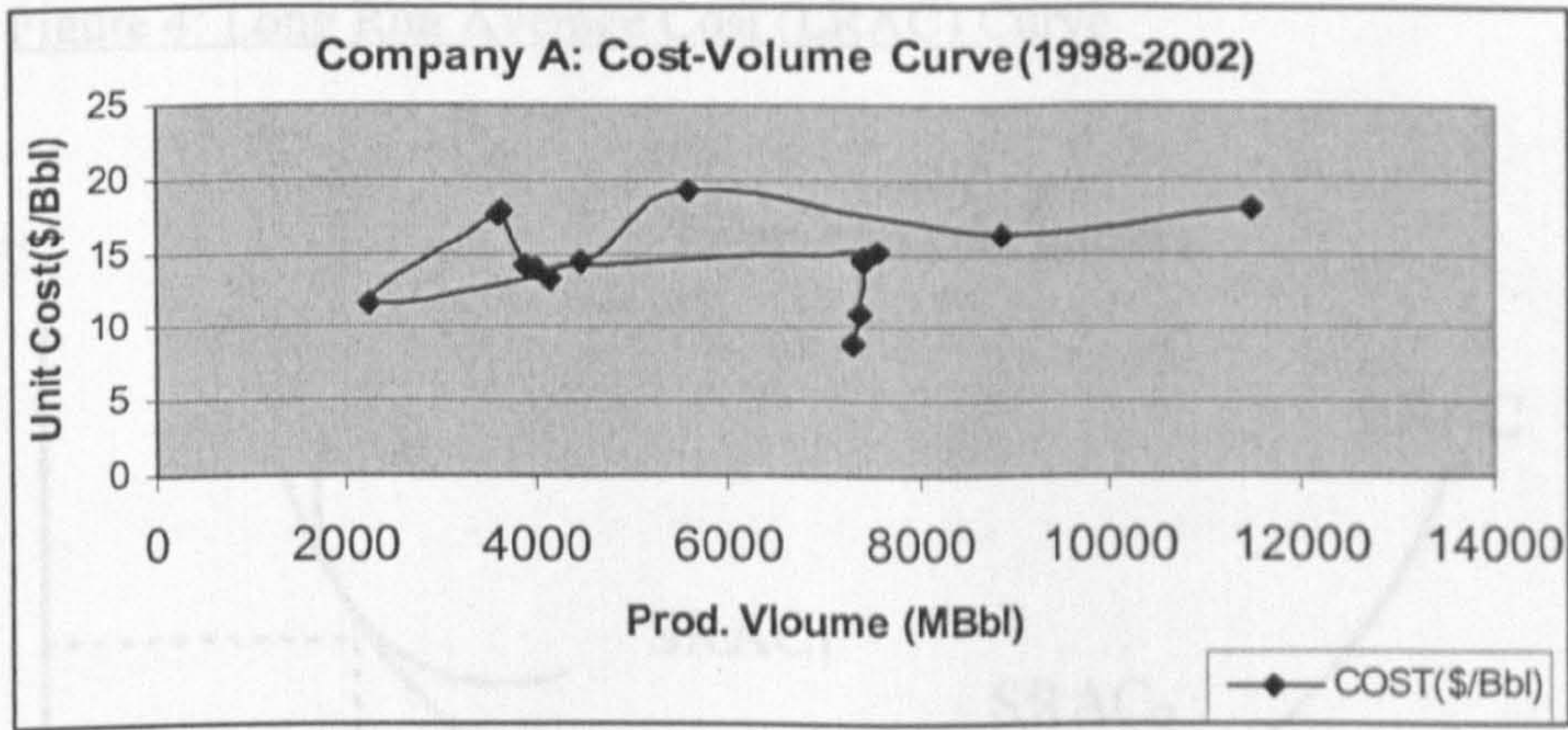


Fig 1

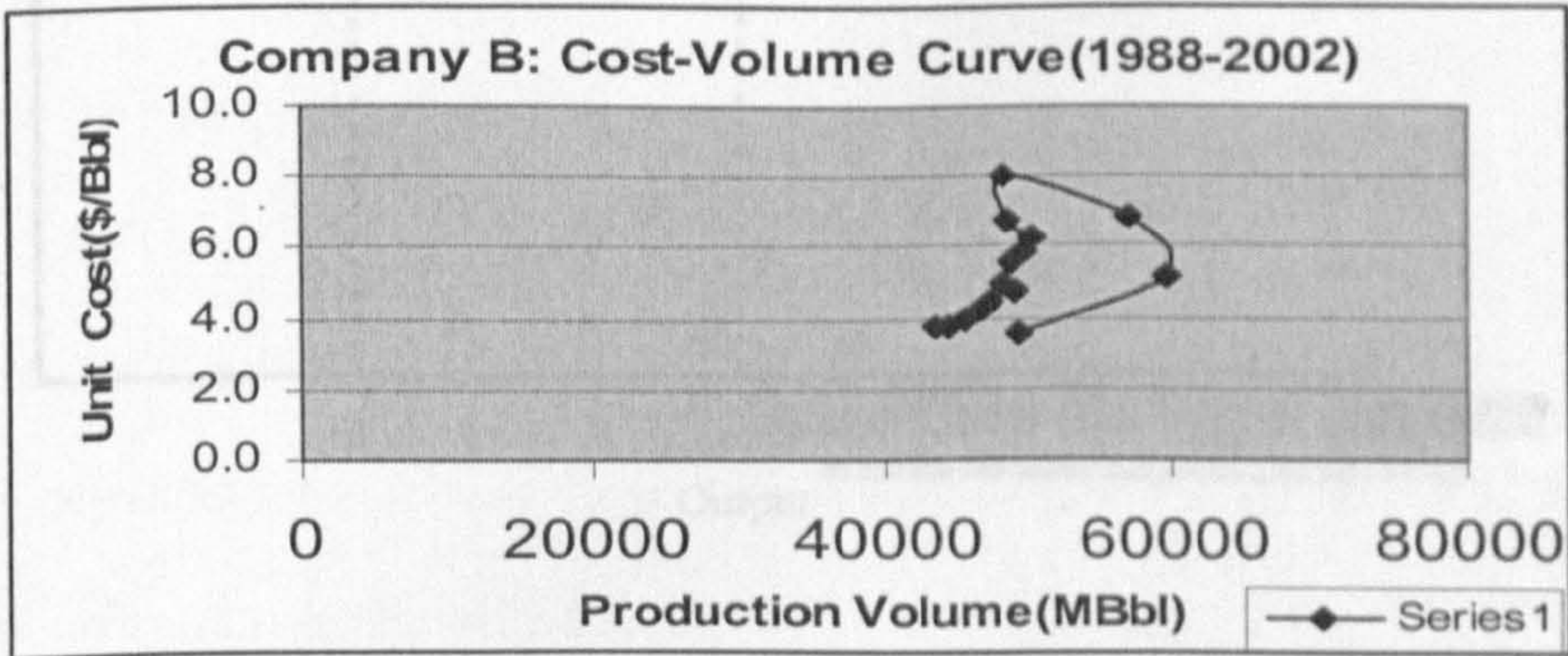


Fig.2

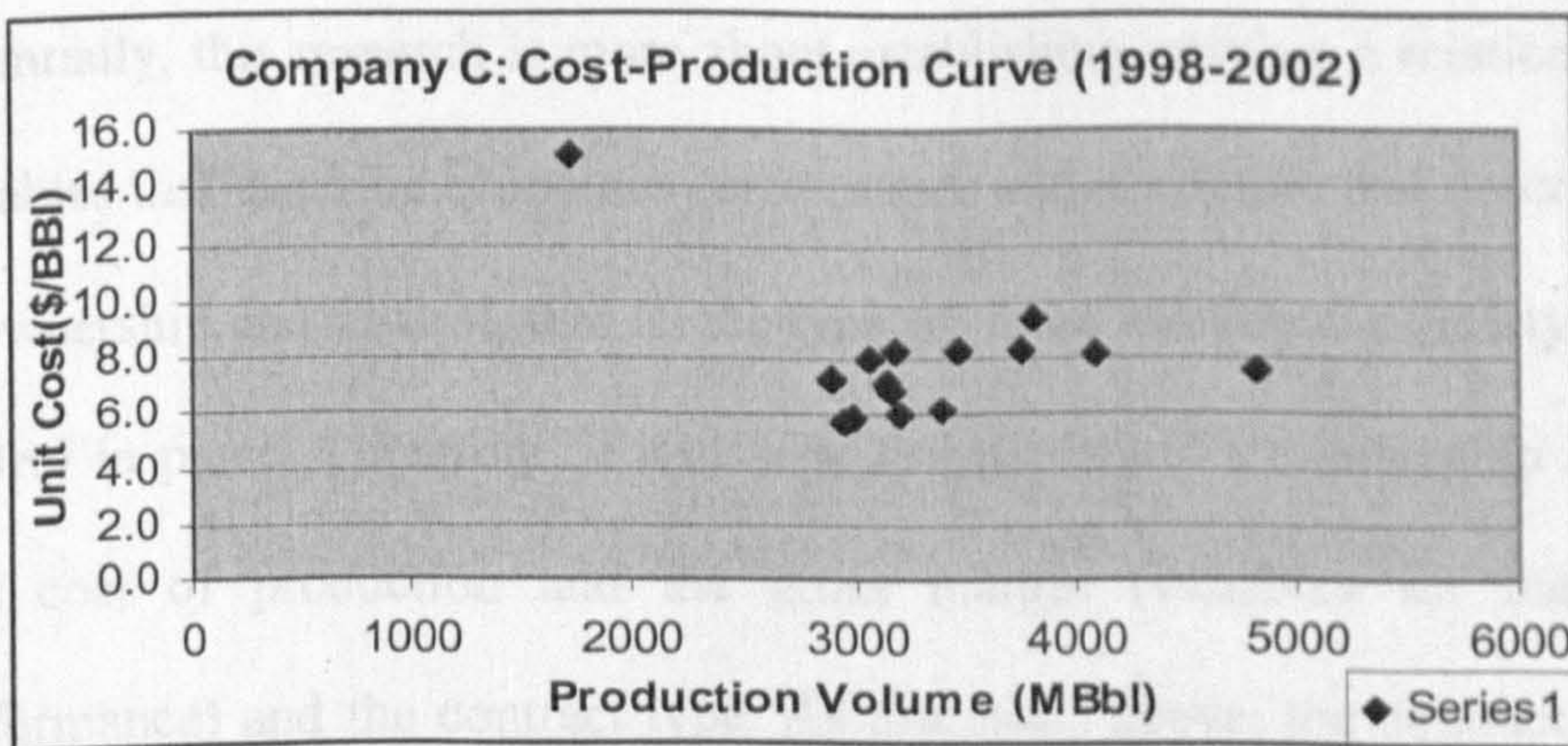
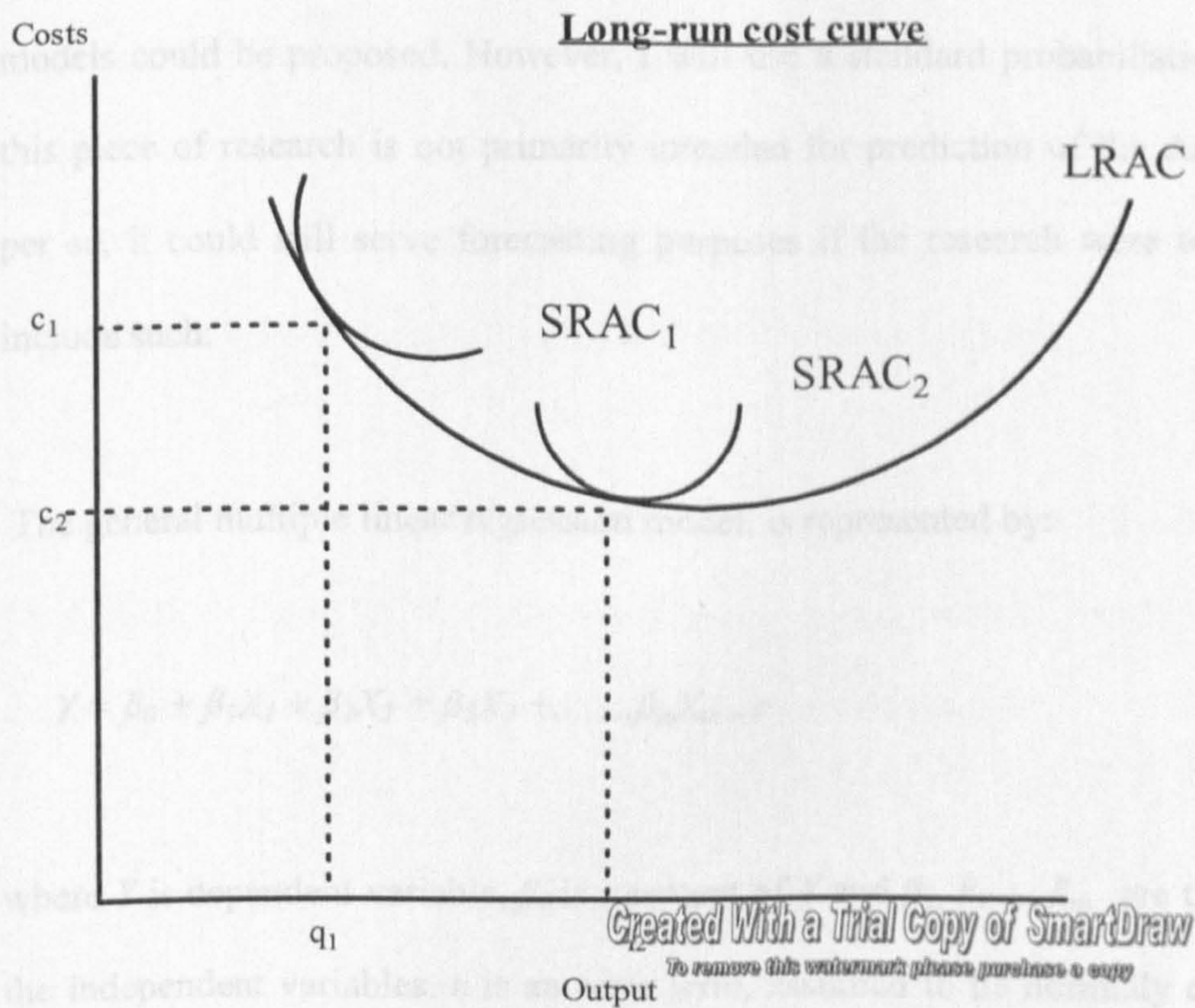


Fig. 3

Figure 4: Long Run Average Cost (LRAC) Curve



8.1.4 Regression Modelling, Assessment and Analysis I

Essentially, this research is more about establishing whether a relationship exists among variables that describe economic performance and a variable that describes the separation of ownership and control, that is, the type of, or an indication of the type of management control in place. Therefore, it will seek to establish if a relationship exists between the unit cost of production and the gross margin (variables for measuring economic performance) and the contract type. As discussed above, the contract type indicates the extent of separation of ownership and control within the two types of organisation – JV and PSC. The contract type also indicates the kind of management disposition to other shareholders and the organisation.

Regression Modelling

In order to examine if these relationships exist, numerous and different mathematical models could be proposed. However, I will use a standard probabilistic model. Though this piece of research is not primarily intended for prediction of the dependent variable per se, it could still serve forecasting purposes if the research were to be extended to include such.

The general multiple linear regression model, is represented by:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \dots \beta_m X_m + \varepsilon$$

where Y is dependent variable, β_0 is intercept of Y and $\beta_1, \beta_2 \dots \beta_m$ are the coefficients of the independent variables. ε is an error term, assumed to be normally distributed with a zero mean and constant variance.

The objective of the data analysis is to establish if a linear relationship exists between the dependent variable, Y , and the independent variables, X_m , using regression analysis for modelling such a relationship.

If we assume that m independent variables are potentially related to the dependent variable, the multiple regression models can be represented as shown above. In a multiple regression model, the error term represents the variations between predicted and actual values of the dependent variable Y that will inadvertently still occur. The residuals will be computed as observations of the error term to find the extent of the minimization of the sum of squared residuals.

Before the proposed multiple regression, a simple linear regression of *LogCOST* on *LogPROD* (where *Log* represents the natural logarithm) was run to examine the elasticity of unit cost with respect to production. For the three companies, it can be observed from Figures 5-7 that the plots of *LogCOST* against *LogPROD* do not suggest strong evidence of elasticities consistent with the existence of economies of scale.

The regression of *LogCOST* on *LogPROD* will give a negative estimated coefficient of *LogPROD* if there are economies of scale, and a positive coefficient if there are diseconomies of scale. The regression equations are of the form:

$$\text{LogCOST} = a + b \text{LogPROD} + \varepsilon$$

where ε is assumed to have a zero mean and constant variance. The coefficient of b , which can be interpreted as the elasticity of unit cost with respect to production, is given by:

$$b = \frac{\Delta \text{LogCOST}}{\Delta \text{LogPROD}}$$

The estimates of the coefficients of *LogPROD* for the separate regressions for the three companies and the coefficients of determination (R^2) are as shown below.

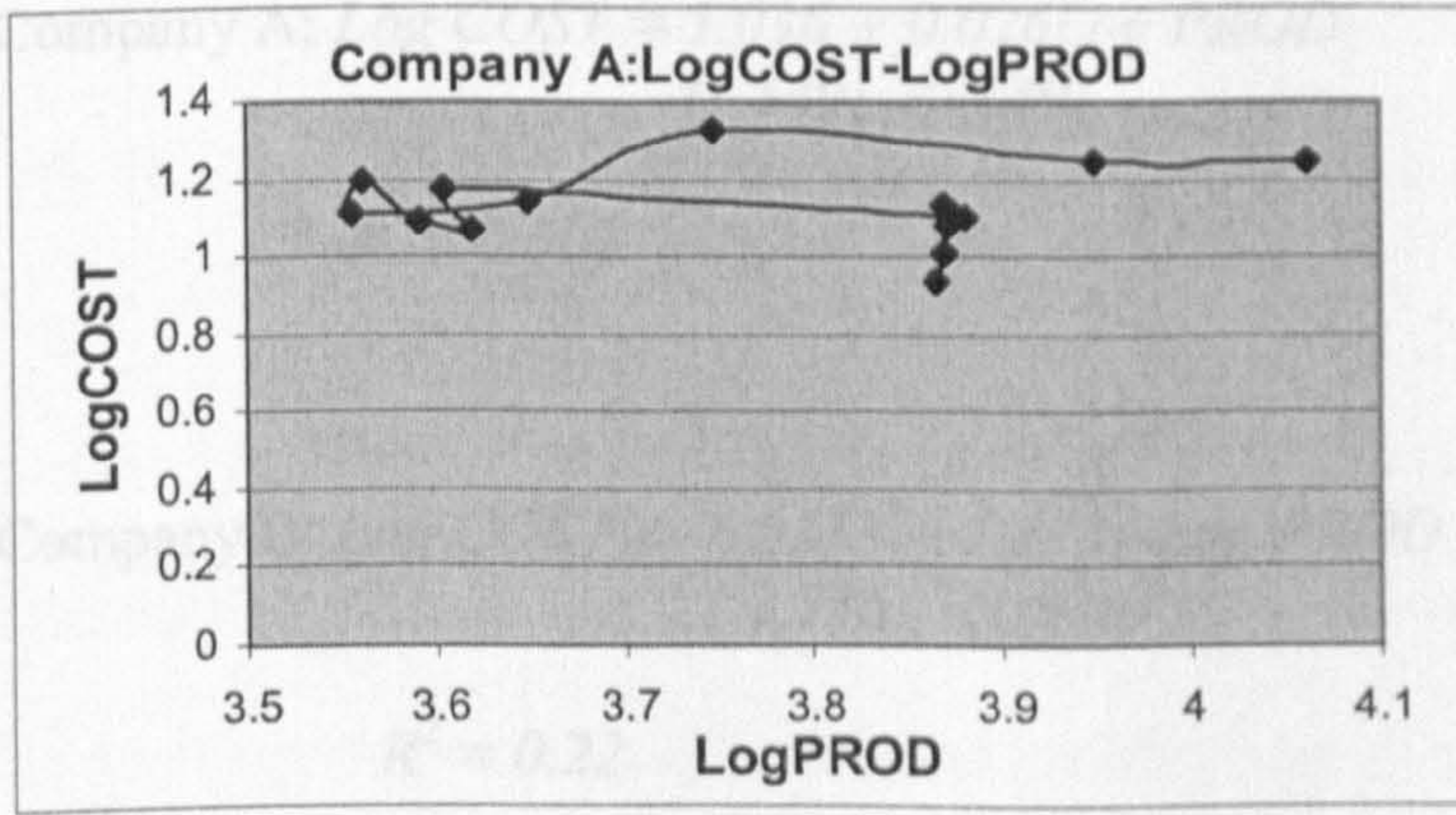


Fig 5

Company C: $\text{Log COST} = 2.3370 - 0.4704(\text{Log PROD})$
 (2.713) (-1.268)

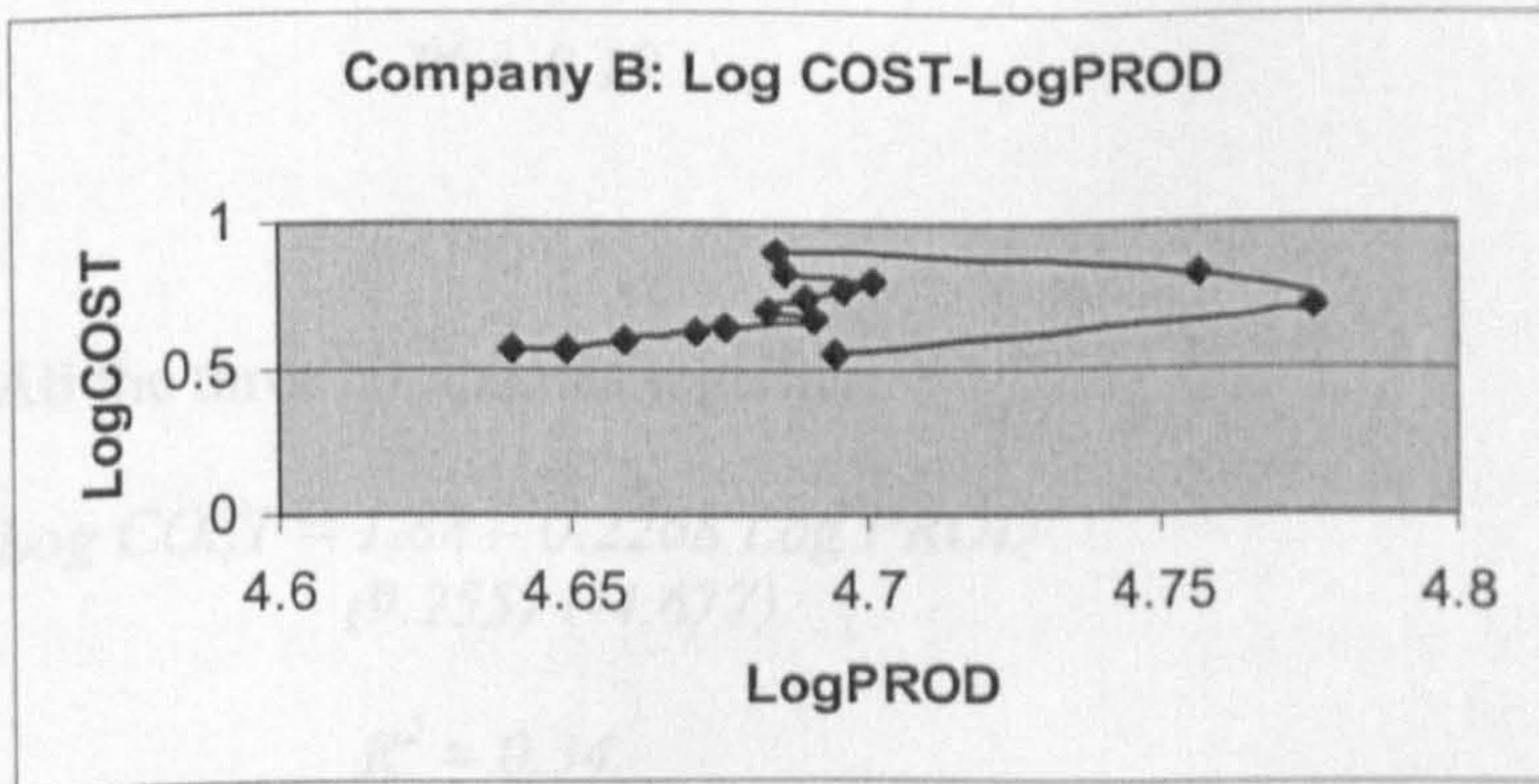


Fig.6

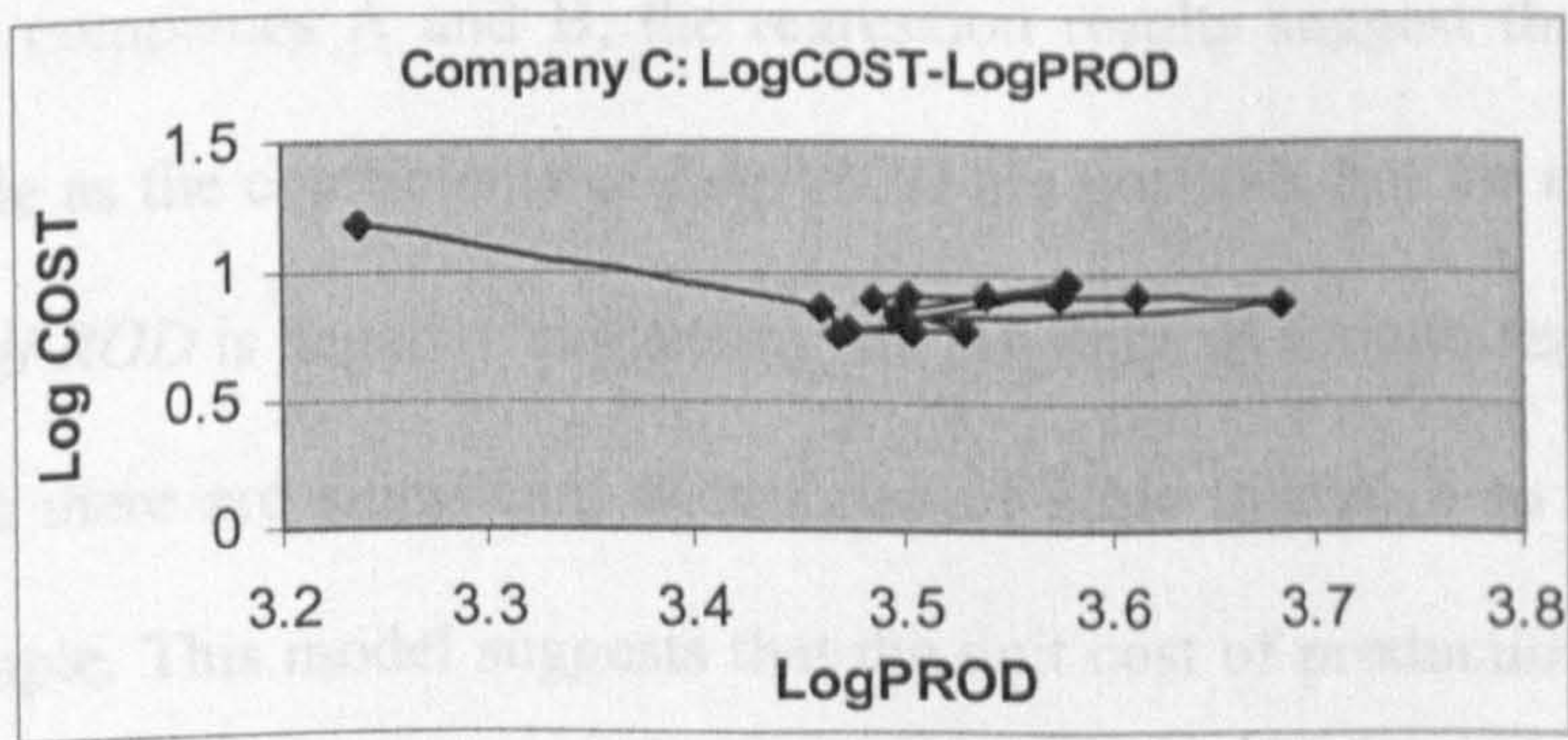


Fig.7

$$\text{Company A: } \text{Log COST} = 1.036 + 0.026 \text{Log PROD} \\ (1.549) \quad (0.149)$$

$$R^2 = 0.002$$

$$\text{Company B: } \text{Log COST} = -6.0153 + 1.4324 \text{Log PROD} \\ (-1.736) \quad (1.940)$$

$$R^2 = 0.22$$

$$\text{Company C: } \text{Log COST} = 2.5350 - 0.4704 \text{Log PROD} \\ (2.713) \quad (-1.768)$$

$$R^2 = 0.19$$

All the three companies together:

$$\text{Log COST} = 1.88 - 0.2268 \text{Log PROD} \\ (9.255) \quad (-4.677)$$

$$R^2 = 0.34$$

(t-statistics in brackets)

For companies A and B, the regression results suggest that there are no economies of scale as the coefficients of *LogPROD* are positive, but for company C the coefficient for *LogPROD* is negative suggesting the presence of economies of scale. It is therefore likely that there are significant economies of scale available to the smallest company in the sample. This model suggests that the unit cost of production is largely negatively related to production volume when all the three companies are considered together. From the regression statistics, the sample correlation coefficient is 0.59 while R-squared is 0.34. These results show that only 34% of the variations in *LogCOST* are explained or

attributable to changes in the volume of production *LogPROD*. The estimated coefficient of *LogPROD* (-0.2268) is significantly less than zero at the 5% level of significance.

To pursue this analysis, and to capture the impact of the contract type (CT) that dictates the management set-up, whereby the presence and/or extent of separation of ownership and control can be investigated, a dummy variable was introduced, set equal to 0 for the JV contract type and 1 for the PSC type. This development therefore gives rise to a multiple regression model.

Multiple Regression

Using EViews software to run the multiple regressions, the data input is assembled as shown in Table 10 above. The multiple regression is designed to investigate the influence of *PROD*, *CT* and time (*T*) on *COST* and *GMPB*. Time is included as an explanatory variable to capture the effects of any upward or downward trends in the data over the fifteen-year period. As above, the natural logarithms of *COST*, *GMPB* and *PROD* are taken. Taking logarithms helps to reduce skew in the data and may reduce the likelihood of heteroskedasticity. The equations to be estimated may be written as:

$$\text{Log } COST = \alpha_1 + \beta_1 \text{Log } PROD + \beta_2 CT + \beta_3 T + \varepsilon_1$$

$$\text{Log } GMPB = \alpha_2 + \beta_{21} \text{Log } PROD + \beta_{22} CT + \beta_{23} T + \varepsilon_2$$

where ε_1 and ε_2 are assumed to have zero means and constant variances. The estimated regression equations are:

$$\text{Log COST} = 1.20 - 0.13 \text{ Log PROD} + 0.31 \text{ CT} + 0.013 \text{ T}$$

(11.67) (-5.3) (11.23) (4.48)

Adj. $R^2 = 0.86$

Standard Error of Regression = 0.079

F Statistic = 77.6

Durbin-Watson Statistic = 1.29

Sample Size = 44

$$\text{Log GMPB} = 0.74 + 0.04 \text{ Log PROD} - 0.45 \text{ CT} + 0.002 \text{ T}$$

(1.54) (0.36) (-3.52) (0.12)

Adj. $R^2 = 0.21$

Standard Error of Regression = 0.375

F Statistic = 4.9

Durbin-Watson Statistic = 1.34

Sample Size = 44

(t-statistics in brackets)

Assessment and Analysis

In the cost equation, the estimated coefficient of *LogPROD* is negative, suggesting the existence of overall economies of scale, while the estimated coefficients of *CT* and *T* are both positive. The associated t-statistics are all above the critical value at the 0.05 significance level; hence the three independent variables are all significant influences on cost per barrel.

In the GMPB equation, the estimated coefficients of *LogPROD* and *T* are both positive but insignificant. The estimated coefficient of *CT*, however, is negative and significant at the 0.05 level. Hence *CT* is seen to have a significant influence on the oil companies' profits, as well as their costs.

In both equations, the coefficients of *CT* have their expected signs. So the evidence suggests that the PSC company has significantly higher costs and a significantly lower gross margin than the JV companies over the fifteen-year period of the study.

However, before the above model can be accepted, it should be tested for autocorrelation, multicollinearity and heteroskedasticity. If these are found to be present, then the model should be subjected to the necessary statistical adjustments for their correction in order to arrive at the best fit model.

Durbin-Watson Test

The results of the Durbin-Watson tests for first-order autocorrelation are inconclusive in both models. The Durbin-Watson statistic is equal to 1.29 in the cost equation and 1.34 in the GMPB equation. These values both lie between the lower and upper critical values given in the Durbin-Watson tables (1.20 and 1.47 respectively at the 0.01 level of significance). So we cannot reject the hypothesis of 'no autocorrelation' in either model.

Correlation Matrix

For the purposes of testing for multicollinearity and obtaining indicative strengths and direction of association between the dependent variable and each of the independent variables, a correlation matrix was produced, as shown in Table 12.

Table 12
Correlation Matrix: LogCOST, Log GMPB,
LogPROD, CT and TIME

	<i>Log COST</i>	<i>Log PROD</i>	<i>CT</i>	<i>TIME</i>
<i>Log COST</i>	1			
<i>Log PROD</i>	-0.59	1		
<i>CT</i>	0.79	-0.30	1	
<i>TIME</i>	0.27	0.02	-0.06	1
<i>Log GMPB</i>	---	0.20	-0.52	0.04

A high degree of correlation between the independent variables would indicate multicollinearity that could render the model unreliable. From Table 12, we see that none of correlation coefficients between the independent variables exceeds $|0.3|$, so it is reasonable to conclude that there is no multicollinearity in the model. The correlation between *LogCOST* and *LogPROD* is negative (-0.58) while that between *LogCOST* and *CT* is positive (0.79). Similarly, the correlation between *LogGMPB* and *LogPROD* is positive, but weak (0.20), while that between *LogGMPB* and *CT* is negative (-0.52).

Heteroskedasticity

Heteroskedasticity refers to the situation where the error variance is not constant. While its occurrence does not bias parameter estimates, it could make them inefficient relative to

alternative estimates. From the range of data analysed, it was expected that there could be heteroskedasticity. Some of the reasons for this suspicion are:

- a. The large range of observations - the production volumes range from 2.9 million to 60 million barrels.
- b. The cross sectional nature of the petroleum industry (in terms of size) - the revenue showed a large variation in firm sizes among companies A, B and C
- c. The data involved fifteen years during which there could be wide variation in crude oil prices, volume of production and the cost profile.

For these reasons, in the estimation presented above, the method of ordinary least squares with White heteroskedasticity-consistent standard errors was used in order to remove any possible bias from the standard errors and t-statistics.

Adjusted R-Squared

Adjusted R^2 is the coefficient of determination and it measures the ratio of the explained variation in the dependent variable (by the independent variables) to the total variation in the dependent variable.

In the regression, the value of adjusted R^2 is 0.86 in the cost equation and 0.21 in the GMPB equation. This means that 86% of the variation in *LogCOST* is explained by variations in *Log PROD*, *CT* and *T*, but only 21% of the variation in *LogGMPB* is explained by the variations in these variables.

F-Statistics

The F-statistics test the overall significance of the regression equation. If the calculated F-value is greater than the critical value in the F-statistic table, we can reject the null

hypothesis (which says there is no relationship between the dependent and independent variables), and accept the alternative hypothesis that says they are linearly related. The F-statistics in the cost and GMPB equations are 77.6 and 4.9 respectively, both of which are higher than the critical value of 3.23, and therefore allow us to reject the null hypothesis of 'no relationship'. This allows us infer that the regression models both have sufficient statistical resilience to be adopted for interpretation.

8.1.5 Interpretation

From the outcome of the above data analysis, the type of contract appears to significantly determine the unit cost of production and the gross margin per barrel. This therefore allows us to appreciate the linkage between the extent of the separation of ownership and control in the Nigerian oil and gas exploration and producing industry and the economic performance of the operations. With the JV contract type, the host government that owns majority shares (an average of 55%) is probably able to control the management of such companies through representation and majority voting rights on the Board of Directors. Such controls are essentially with respect to cost and financial policy, financial control systems, manpower / equipment productivity and general management policy. Under the JV contract type, management consists essentially of the representatives of the minority shareholders (that is, the international oil companies) under the supervision of the Board of Directors.

Under the PSC, the host country's control of management is contained in the contract, with the vetting of work programmes and cost of oil as the main objectives, though the host country has no representation, nor voting rights on the Board of Directors. In addition, under PSC, the host country retains 100% ownership of oil and gas reserves

discovered, and only allows the international oil company (contractor/agent) ownership of a percentage of the oil and gas produced. Also, the contractor is required to provide 100% of funds required for both exploration and production and all other funding requirements and activities. If exploration turns out to be negative, i.e. neither oil nor gas is found in commercial quantities, the entire loss is solely that of the contractor. The implication of this is that the contractor bears 100% of the finance and 100% of the exploration risks in such a high risk venture as petroleum exploration. With the best of scrutiny and control, management as represented by the contractor is not likely to act in a manner that maximises the wealth of the owner of 100% of the reserve asset, given this scenario.

This therefore should explain the basis for the research results whereby the unit cost of production for company A (PSC) is the highest compared to those of companies B and C, which operate under a different contract type (JV), and the gross margin per barrel is lowest in company A compared to those of companies B and C. Similarly, it also suggests why the operations of Company A are the least likely of the three companies to conform to economies of scale in its production profile, while company C exhibits some degree of economies of scale.

In the classical theory of separation of ownership and control, whereby control is held by the majority shareholders, management is not expected to be able to act against the maximization of wealth of the owners of the business. These research results suggest that this may not be the case in the Nigerian oil and gas exploration and producing industry as the PSC contract type has been shown to negatively affect the performance or cost efficiency of the company that operates it, relative to those companies operating under the JV contract type despite the host country's 100% ownership and its retention of control.

The problem may not entirely be a lack of statutory provisions for control by the majority shareholder, but in its inactive utilization of such provisions giving rise to latent control.

This research result confirms the null hypothesis that there is a significant linear relationship between contract types (JV and PSC) and the variables for measuring economic performance (unit cost of production and gross margin per barrel). CT is therefore one of the independent variables that determine an operating companies' economic performance.

In this study, the PSC contract type resulted in a negation of maximization of shareholders' wealth as a result of the perceived reason of not giving consideration to the behaviour of the agent as represented by contractor/management. Contract type was also shown to have influenced the gross margin per barrel, and the PSC does not appear to have contributed to the maximisation of shareholders' wealth.

This is a negation of the neo-classical theory of the firm, which regards the sole objective of the firm as profit maximisation without consideration for the behaviour of the participants (owners and agents) in the firm. In the neo-classical theory, there is a failure to mirror the behavioural pattern of both principals and their agents (particularly that of the agent) but an assumption that their objectives, and therefore their utility functions are common or similar.

Given that people, such as contractors or operators of a PSC company, are naturally inclined to pursue their own objectives, which tend to maximise their individual interests, it is arguable that when ownership is diffused, control diminishes and managers may tend

to pursue objectives that satisfy their own interests, which are not necessarily profit maximization or preservation of value, but possibly detrimental to the interests of other shareholders (Short, 1994).

In the case investigated, ownership has not been diffused, yet the agent's behaviour has been detrimental to the interest of the owners. This could be as a result of the absence of the representation of the owners in management, which is necessary if the agent is not to behave against the interest of the owners, as proposed by Berle and Means (1932)

Again, as stated in the literature review, there have been departures from equity-based, control, which are as a result of substantial percentage shareholding. An example of such departure is the conclusion by McEachern (1975) that classified owner-controlled firms into two groups. He made a distinction between outside owners that are not actively involved in management as 'externally controlled' firms, and owners who are managers as 'owner managed' firms.

The arrangement of the production sharing contract in Nigeria appears to fit the description of an externally controlled firm. The research result adds this to the body of knowledge (amongst other contributions), that in the oil and gas exploitation PSC type of contract, externally managed companies are not likely to maximize shareholders' wealth.

Generally, there is no consensus on the level of ownership and control classification. This has affected the interpretation of research results on ownership and control separation and its impact on the firm (Short, 1994). However, I have based my conclusions on the results of this research which has exposed contract type as a key contributory variable to

economic performance (in the field of separation of ownership and control) under corporate governance with respect to oil and gas exploitation in a developing country, such as Nigeria.

8.2 Data Analysis on Fiscal Taxation

The data analysis for the second part of this research is based on secondary data on Nigeria's oil and gas exploration and production for thirty-three years, which were sourced from public statistics, published by reputable international organisations, and unpublished statistics sourced from the producing companies and the country's Inland Revenue Service.

The sources include:

1. US Energy Information Agency (EIA) – one of the units in the US Department of Energy.
2. BP Statistical Review of World Energy – a major publication of BP-Amoco.
3. World Bank
4. Nigerian Federal Inland Revenue Service (FIRS)
5. OPEC Annual Statistical Review

8.2.1 Data Set

The data set spans the period 1970–2002 and comprises the yearly production volume (measured in millions of barrels), average annual price of crude oil in US dollars per barrel (\$Bbl), operating and capital expenditure in millions of dollars for the entire Nigerian oil and gas exploration and producing sector. Due to the sensitive nature of some of the figures, (the unpublished portion), confidentiality will be maintained,

particularly with respect to the cost profile. The names of the specific companies cannot therefore be revealed. All computations were performed using Microsoft Excel and EViews computer software.

8.2.2 Analysis

The research for this part of the study is centred on investigating whether fiscal taxation is a significant instrument in actualising the Nigerian government's control and if so, the extent of its impact on the economic performance of the operating companies. Hence, the study employs a regression analysis to develop a financial model of the determinants of economic performance.

The study investigates the effect of the proportion of government take in revenue on cost per barrel. While we could consider other components of cost, they are arguably less appropriate. However, such cost items include investment tax credits; value added tax, excise duty and import tariff exemptions or refunds after a certain level of investment spending. [Note that the gross margin per barrel is not used as a measure of financial performance in this part of the study because of the potentially distorting effects of changes in the price of oil on both the gross margin and 'government take'.]

In the case of Nigeria's oil industry, the above issues of tax are not significant compared to direct fiscal taxation, the components of which are referred to as 'Government Take' (GT). In its full sense and meaning, GT in a country like Nigeria includes:

- a. Royalty Payments
- b. Petroleum Profit Tax (PPT)

- c. Percentage share of PAT (depending on the government's equity in the company's ownership structure)

For the purpose of this research, however, GT is taken to be the sum of royalty payments and PPT. This is because the percentage share of PAT is not related to fiscal taxation affecting the companies' economic performance in that whatever the host country's percentage holding, it is not tax related, though related to final profit. If the host country's equity had been zero or X percent, the same tax and royalty rates would have applied. Rather, equity is a component of the entire fiscal regime/contract governing oil and gas operations.

Actual costs formed the basis for computing the cost profile from the raw data sourced from the oil companies. In order to minimize the impact of interest and foreign exchange rates on the costs, a combination of the US GDP deflator and inflation rates was employed.

Fixed operating costs as an apportionment of operating expenditure (OPEX) is based on figures for a combination of big and small sized fields. Where there are gaps in the number of fields during the period in review, data for known years were used to apportion the fields using known total production volumes for those years, in order to determine the field numbers with respect to size. This assumption also formed the basis for variable operating costs.

Also, given the country's onshore-offshore production profile, of about 90% and 10% respectively, and with 80% of total production by the 44 big fields, and 20% from the 166

small fields, the computation of total OPEX was based on these assumptions in that company figures sourced were field sizes and onshore/offshore related. Similarly, onshore capital expenditure (CAPEX) is considered at 75% of offshore CAPEX per barrel of oil produced. This assumption was obtained from the company officials contacted.

All figures are related to oil exploration and production. Though Nigeria is now a major gas producer, before 1999 when it exported its first gas, associated gas produced alongside oil was flared.

8.2.3 Descriptive Statistics

The full set of data used in the study is shown in Table 13, and a set of descriptive statistics is given in Table 14. Table 15 shows a comparison of GT and PAT as percentages of total revenue and these statistics are also illustrated graphically in Figures 8 and 9.

From the summary of the descriptive statistics, the range of prices is \$38.2/Bbl with the mean at \$19.18/Bbl. The mean GT of \$9 billion is a significant amount,

Table 13.

Nigerian Oil and Gas Revenue, Tax Yield and Companies' Profit Profile (1970-2002)*

Year	Production (mBbl)	Oil Price (\$)	Revenue. (M\$)	Total Cost (M\$)	Royalty (M\$)	Profit B/Tax (M\$)	PPT (M\$)	Govt. Take (M\$)	Profit A/Tax (M\$)
1970	394	2	710	361	142	206	103	245	103
1971	558	2	1189	520	238	431	216	454	216
1972	664	2	1634	590	327	717	395	721	323
1973	748	3	2350	630	470	1250	687	1157	562
1974	825	12	10262	844	2052	7366	4477	6529	2889
1975	650	14	9018	2633	1804	4581	3894	5697	687
1976	756	12	9422	3057	1884	4481	3808	5693	672
1977	763	15	11084	3082	2217	5786	4918	7135	868
1978	694	15	10097	2792	2019	5286	4493	6513	793
1979	840	22	18083	3436	3617	11030	9375	12992	1654
1980	752	30	22534	2812	4507	15216	12933	17440	2282
1981	522	40	20878	1952	4176	14750	12538	16713	2213
1982	475	37	17319	1775	3464	12081	10269	13733	1812
1983	453	36	16067	1693	3213	11161	9487	12700	1674
1984	507	30	15221	1897	3044	10279	8737	11781	1542
1985	548	28	15330	2048	3066	10216	8684	11750	1532
1986	537	29	15372	2007	3074	10291	8747	11822	1544
1987	489	17	8378	1829	1676	4873	4142	5818	731
1988	529	19	10013	1979	2003	6031	5127	7129	905
1989	628	15	9448	2348	1890	5211	4429	6319	782
1990	661	21	14006	2471	2801	8734	7424	10225	1310
1991	690	28	19178	2580	3836	12762	10848	14684	1914
1992	708	18	12887	2662	2577	7648	6501	9078	1147
1993	715	19	13235	2710	2647	7878	6697	9344	1182
1994	704	14	9510	2714	1902	4894	4160	6062	734
1995	729	16	11778	2727	2356	6695	5691	8046	1004
1996	780	20	15373	2919	3075	9380	7973	11048	1407
1997	841	25	20721	3144	4144	13433	11418	15562	2015
1998	789	17	13027	2953	2605	7469	6348	8954	1120
1999	740	11	7846	2768	1569	3509	2982	4552	526
2000	768	26	19612	2871	3922	12819	10896	14818	1923
2001	784	22	17248	2932	3450	10867	9237	12686	1630
2002	726	20	14425	2714	2885	8827	7503	10388	1324

*1970-2002 Petroleum Profit Tax Payments Based On Varying Tax Rates:
1970-71: (50%), 1972-73: (55%), 1974: (60.78%), 1975-2002: (85%)

Table 14.

Summary Descriptive Statistics

	Production (mBbl)	Oil Price (\$)	Revenue. (M\$)	Total Cost (M\$)	Royalty (M\$)	Profit B/Tax (M\$)	PPT (M\$)	Govt. Take (M\$)	Profit A/Tax (M\$)
Mean	666	19.2	12523	2256	2505	7762	6519	9024	1243
Median	704	18.5	13027	2633	2605	7648	6501	9078	1182
Std. Dev.	123	9.68	5723	840	1145	4110	3555	4691	649
Minimum	394	1.8	710	361	142	206	103	245	103
Maximum	841	40	22534	3436	4507	15216	12933	17440	2889
Sample Size(Yrs)	33	33	33	33	33	33	33	33	33

representing 72% of revenue, compared to mean profit after tax at 10% of revenue. This may be a pointer to the significance of GT in the economic analysis.

An examination of these statistics also shows that mean petroleum profit tax is about 84% of profit before tax. When examined in relation to total sales revenue, mean petroleum profit tax is 52% of revenue, again suggesting its significance.

Because the royalty is revenue based, when added to petroleum profit tax as the second component in government take, the impact of government take on revenue becomes very significant at 72%. Moreover, government take is observed to exceed the profit before tax for all years examined but two.

A further observation of the descriptive statistics includes the relatively low level of profit after tax given the revenue generated. An average of 10% profit after tax is achieved in relation to revenue for the thirty-three year period investigated, whereas

Table 15.

**Comparison of GT and PAT
As Percentages of Revenue**

Year	GT %Rev.	PAT %Rev
1970	35	15
1971	38	18
1972	44	20
1973	49	24
1974	64	28
1975	63	8
1976	60	7
1977	64	8
1978	64	8
1979	72	9
1980	77	10
1981	80	11
1982	79	10
1983	79	10
1984	77	10
1985	77	10
1986	77	10
1987	69	9
1988	71	9
1989	67	8
1990	73	9
1991	77	10
1992	70	9
1993	71	9
1994	64	8
1995	68	9
1996	72	9
1997	75	10
1998	69	9
1999	58	7
2000	76	10
2001	74	9
2002	72	9

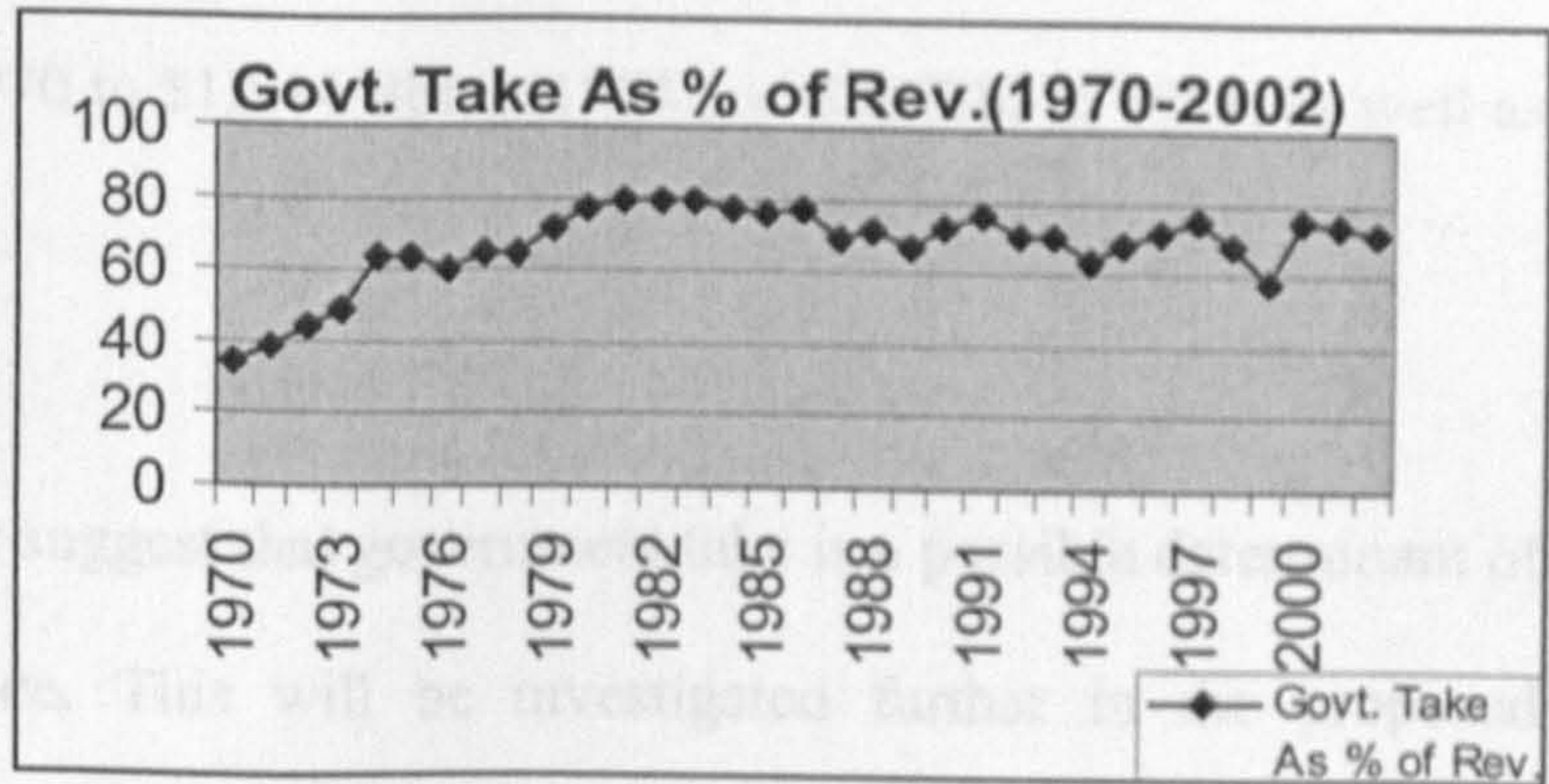


Fig.8

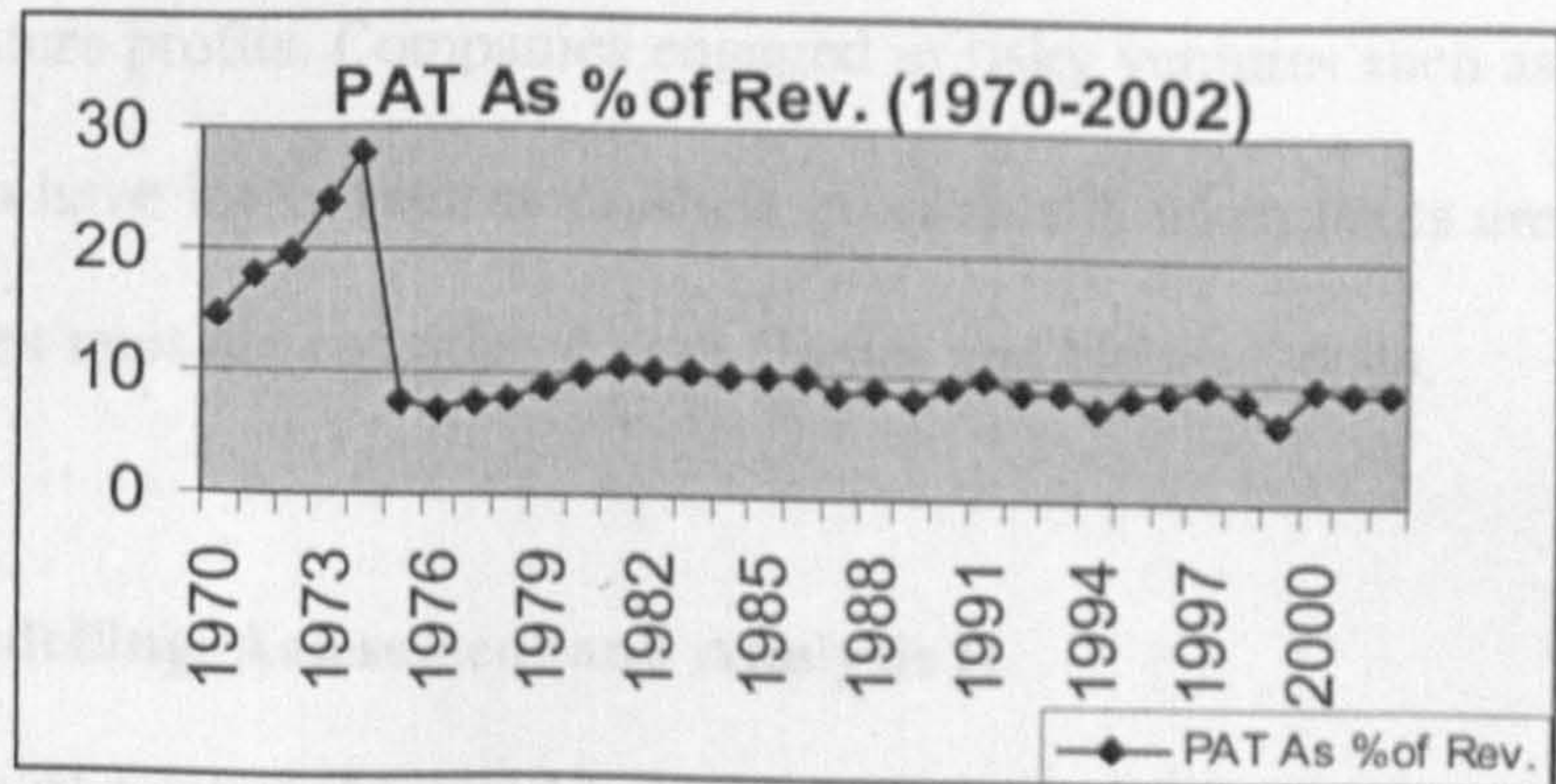


Fig. 9

the average government take recorded for the same period is 72%. The significant increases in government take as a percentage of revenue from 34.5% and 38% in 1970 and 1971 respectively to 64% (1974) and 80% (1981) are due to the substantial increases in oil prices from \$1.8/Bbl in 1970 to \$12.44/Bbl in 1974 and \$40/Bbl in 1981, as well as significant increases in tax rates.

The descriptive statistics further suggest that government take is a possible determinant of company economic performance. This will be investigated further in the proposed regression analysis of the financial figures in order to determine the extent of its impact on cost per barrel. However it is generally known that the imposition of tax could constitute a disincentive for corporate organisations particularly when there is no provision for loss offset with future profits. Companies engaged in risky ventures such as mineral extraction, are likely to have lower returns on their investments when taxes are levied, particularly when such tax rates are considered high (James and Nobes, 2001).

8.2.4 Financial Regression Modelling, Assessment and Analysis II

For a more precise investigation of relationships and linkages among variables, statistical regression analysis is conducted. This is with a view to establishing if a relationship exists between the dependent and independent variables. In respect of this investigation, the dependent variable chosen as the main measure of economic performance is cost per barrel.

Given the objective of the data analysis, which is to establish if a relationship exists between economic performance and fiscal taxation, as measured by government take as a proportion of revenue, the following multiple financial regression model is adopted:

$$\text{Log COST} = \beta_0 + \beta_1 \text{Log PROD} + \beta_2 \text{Log GTIR} + \beta_3 T + \varepsilon$$

where:

LogCOST is the natural logarithm of cost per barrel produced (as before).

LogPROD is the natural logarithm of production volume (as before).

LogGTIR is the natural logarithm of government take as a ratio of revenue, i.e. ((royalty + petroleum profit tax) / revenue).

T represents time and is a variable which takes the values 1, 2, 3,, 33 for the period 1972-2002.

ε is the error term assumed to have a zero mean and a constant variation.

A correlation matrix is shown in Table 16. The highest correlation coefficient between pairs of independent variables is 0.53, so multicollinearity is unlikely to be a problem in the regression. The dependent variable, *LogCOST*, is positively correlated with *LogGTIR*, *LogPROD* and *T*, the highest correlation being with *LogGTIR* (equal to 0.78).

Table 16
Correlation Matrix of LogCOST, LogGTIR, LogPROD and TIME

	<i>LogCOST</i>	<i>LogGTIR</i>	<i>LogPROD</i>	<i>TIME</i>
<i>LogCOST</i>	1			
<i>LogGTIR</i>	0.78	1		
<i>LogPROD</i>	0.13	0.06	1	
<i>TIME</i>	0.57	0.53	0.33	1

A multiple regression of *LogCOST* on *LogGTIR*, *LogPROD* and *T* was run, and the result is as follows:

$$\text{Log COST} = 1.07 + 1.79\text{LogGTIR} - 0.126\text{LogPROD} + 0.0053T$$

(1.38) (5.80) (-0.45) (1.79)

Adjusted $R^2 = 0.67$

F Statistic = 22.80

Durbin-Watson Statistics = 1.1

Standard Error of Regression = 0.129

Sample size = 33 years

Analysis and Assessment of the Model

From the estimated cost equation, the adjusted R^2 value of 0.67 suggests that 67% of variations in cost per barrel produced are attributable to variations in the following independent variables, government take as a ratio of revenue, production volume and time.

The value of the Durbin-Watson statistics for the regression is 1.1, which is less than 1.26, the lower boundary of the critical range for three independent variables and thirty-three observations. This suggests the possibility of positive first-order autocorrelation. However, the coefficients and t-statistics are significant enough in providing a reasonable model of the relationship between the dependent variable of cost per barrel, and the independent variables of government take as a ratio of revenue, production volume and time.

The regression coefficients suggest that of these variables, government take as a percentage of revenue explains more of the variations in cost per barrel produced than the

volume produced and time. In fact, *LogGTIR* is the only independent variable that has a significant influence on *LogCOST* at the 0.05 level. Also, as expected, the estimated coefficient on *LogGTIR* is positive, indicating that increases in government take have led to increases in the cost per barrel.

8.2.5 Interpretation

Government take as a proportion of revenue increased from 35% in 1970 to 63% in 1975, and averaged 72% between 1970 and 2002. Given that the royalty is a price-based element of fiscal taxation and that petroleum profit tax alone represented 52 percentage points of the 72% government take as a ratio of revenue, it can be suggested that fiscal taxation through direct imposition of taxes is a significant factor that affects economic performance. Therefore both components of government take - that is, royalty and petroleum profit tax - are significant factors of fiscal taxation with which government controls the oil and gas exploration and production in Nigeria, and both determine the economic performance of the oil and gas companies.

Generally, the price of oil is expected to be significant in the determination of economic performance of the companies. The changes in oil prices during the period 1970-2002 are summarised in Figure 10. Without an oil price increase between 1970 and 1972 (\$2.0 per bbl for both years), but with a 68% increase in production, it was observed that cost per barrel decreased only slightly from \$0.92 in 1970 to \$0.89 in 1972 (3.3%). Government take as a proportion of revenue (GTIR), however, increased from 35% to 44% for same period. This could not be attributable to the price increase, but was possibly due to a 5% increase in the petroleum profit tax rate from 50% in 1970 to 55% 1972.

When the oil price increased from \$2/Bbl in 1972 to \$3 /Bbl in 1973 (50% increase) and by 17% in 1974 compared to the 1973 price, GTIR increased from 44% in 1972 to 64% in 1974 and from 49% in 1973 to 64% in 1974. For these periods in review it is observable that petroleum profit tax rates increased significantly - that is, from 55% in 1973 to 60.78% in 1974.

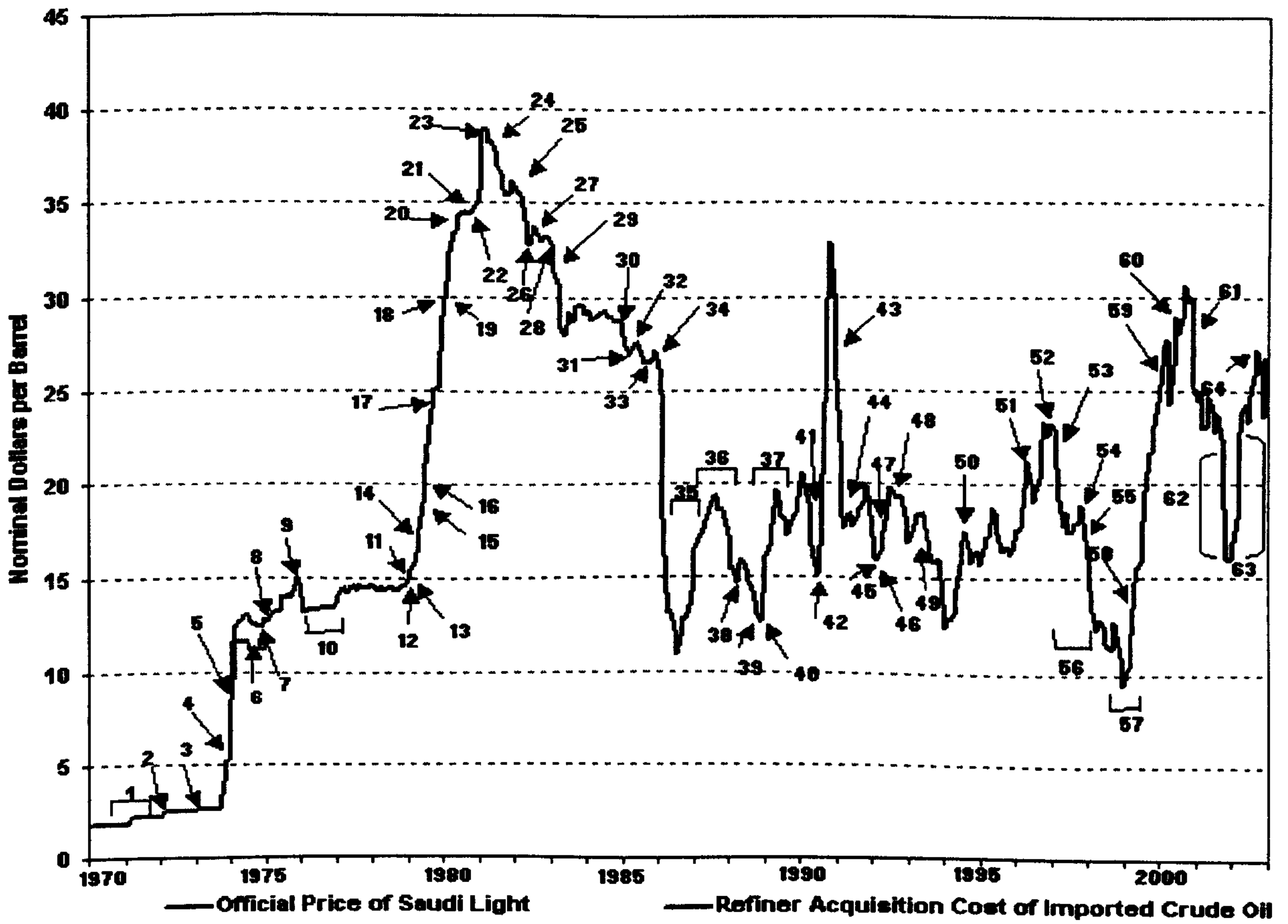
If GTIR for 1974 were calculated based on the 55% tax rate of 1972/1973, for the same production volumes, total cost and oil price in 1974, the GTIR for 1974 would have been 59% and not the 64% recorded. Similarly, if for the same production volume, oil price and total cost in 1974, the 1970 tax rate of 50% is applied, the GTIR for 1974 would have been 56% and not 64%.

When the same type of calculation is made for 1975 volumes, oil price and total cost, but with 1974 tax rate of 60.78%, the GTIR for 1975 would have been 51%, as against 63% recorded for 1975 based on the increased tax rate of 85% in 1975. All of these suggest that the GTIR has negatively impacted on cost per barrel, or the economics of the operation.

The implication of such fiscal taxation policy is that it constitutes a disincentive effect for economic performance by operating companies. This is much more evident with high risk operations like oil and gas exploitation where the operating companies are uncertain about their exploration activities. Therefore with high tax rates, companies tend to be less cost conscious making use of their multinational operations to engage in transfer pricing, in order to negate the effects of such tax policies on their operations.

Fig.10

Graph of Crude oil prices 1970 to 2002



CHAPTER 9

CONCLUSION

The conclusions of this research are based primarily on the outcomes of the qualitative and quantitative data analysis carried out in the course of the investigation. The research therefore does not claim to be an extension of any previous work but draws parallels and similarities from related academic research, where applicable, and from information sourced from the various interviews conducted, as well as my previous understanding of the economics of the industry.

The research results have provided bases from which conclusions can be drawn, such that the conclusions are both inductive and deductive. Since there are two aspects to this research topic, the conclusions are divided into two parts. Both parts address the initial questions of the identification of the determinants of the economic performance of oil and gas exploration and producing companies operating in Nigeria.

In order to draw conclusions, we first reconsider the hypotheses set out in chapter 7.

9.1 Conclusions on the separation of ownership and control

Hypothesis H₁: Contract Type (CT) is a significant determinant of economic performance for oil and gas exploration and producing companies operating in Nigeria.

Evidence: From the multiple regression models, CT, as an independent variable, is seen to have a significant effect (based upon the sample) on both of the chosen measures of financial performance (cost per barrel and gross margin per barrel). Thus, the evidence supports Hypothesis H₁.

Hypothesis H₂: The Production Sharing Contract type (PSC) in comparison to the Joint Venture (JV) contract type does not optimize the economic performance of oil and gas exploration and producing companies operating in Nigeria.

Evidence: From the results of the analysis, Company A (PSC) recorded the highest unit cost of production and the lowest gross margin per barrel compared with companies B and C which operated under the JV contract type. Also, the regression results indicate that CT has a positive influence on the cost per barrel and a negative influence on the gross margin per barrel. Thus the evidence supports Hypothesis H₂.

Given the argument of Morck et al (1988), and some other scholars, that there is no evidence confirming any relationship between owner controlled groups of firms and performance, this research result differs from this argument in providing empirical evidence that owner control of Nigeria's oil producing companies operating under a PSC does have an impact on economic performance. In particular, the results suggest that a PSC results in poorer economic performance compared with JV contract type companies, where ownership is diffused, thereby suggesting a more efficient allocation / utilization of resources, unlike under the PSC, where despite 100% equity ownership by the government, control is less effective.

Also, this study shows that, contrary to the findings of Shleifer and Vishny (1996), large shareholders (particularly those with 51% or more) have significant control where ownership and control are not separated because they are capable of addressing the

agency problem. In the case investigated, it has been shown that this may not be the situation in the Nigerian oil producing industry.

Although the government has 100% ownership and the contract makes provisions for the exercise of control over management/agent/contractor, such an arrangement has reinforced the incidence of the agency problem, which is evident from the poorer economic performance of PSC companies compared with JV companies.

Another angle to this research is that it corroborates the findings of Letza (1998), according to which, when majority shareholders like the government have little interest of the minority stakeholders (in this case, the contractor), it contributes to failure (of public services). In this instance, the government's exhibition of little interest of the contractor/agent could be said to have resulted in lower economic performance for PSC than JV contract type companies in Nigeria's oil producing industry.

While the JV contract type allows more control by the host government, in that it provides for its representation on the Board of Directors (despite 55% average ownership), the PSC does not allow adequate control as the country has no representation on the Board of Directors despite 100% ownership.

While it is truly difficult to generalise on the actual impact of equity ownership concentration (and the inherent control implications for large shareholding) and separation of control on the economic performance of firms, the commercial arrangement between country and country, terms of contract and licences, external control over internal financial systems and voting participation and control (which is absent in the

Nigerian PSC) are critical in the case examined. This research opens the floodgate for further investigations of the financial control systems of multinational oil companies' affiliate operations, particularly with respect to their corporate governance practices.

The following conclusions are deducible from this section of the research and are pointers to further research in this field of study:

- (a) While it has been shown by this study that contract type influences economic performance, the claim of maximization of shareholder/owners' wealth as a result of the separation of ownership and control cannot be said to be universal as this research result has shown.
- (b) This study also shows that the JV contract type enables the maximization of shareholders' wealth more than the PSC.
- (c) The result contributes to the theory that the separation of ownership and control creates and perpetuates the agency problem (Monsen and Downs 1965) and that it applies to the oil exploration and producing industry, as in the investigated case where control is latent. It further adds the dimension of contract type. That is, the choice of contract type is a factor determining the extent of the agency problem.
- (d) This study also concludes that the host country's intention to maximise its wealth from petroleum exploitation by owning 100% of the reservoir asset and without bearing any part of the finance and exploration risks through employment of PSC contract type is unrealisable.

Though this study buttresses some of the existing theories concerned with separation of ownership and control in the field of corporate governance, it has provided additional knowledge on the economic implication of the adoption of PSC (as sub-optimal, at least in comparison to JV) as the preferred contract type by developing petroleum producing countries like Nigeria. The preference for PSC (in the first place) is due to the zero-level capital commitment requirement, and its no-risk nature for the host country.

This is an example of developing economies' fiscal policy rationalization borne out of persistent liquidity and balance of payment problems. (World Bank Report, 2002). Consequently, the optimization of economic returns desired by the host country becomes doubtful. The contract types have, however, proved to be key determinants of economic performance of oil producing companies in Nigeria as the research results show.

9.1.1 Areas of Further Research

It is believed that this study could lead to additional areas of investigation in order to reinforce the current research outcomes. Such areas of study include:

- i. What aspects of control are lacking in the PSC contract type being employed by petroleum producing developing countries?
- ii. If the host countries are to effectively control the agents/contractors, what is the nature of transaction cost economics involved, particularly in comparison to the transaction cost economics for the JV contract type?
- iii. How universal is the problem of the sub-optimization of shareholders' wealth through PSC compared to JV in the petroleum industry and in any industry for that matter?
- iv. Is this problem peculiar to the developing oil producing countries?

9.2 Conclusions on Fiscal Taxation

Hypothesis H₃: Fiscal taxation has a negative influence on Nigeria's oil and gas operating companies' economic performance.

Evidence: From the regression model, the evidence supports Hypothesis H₃ since the coefficient of government take as a ratio of revenue in the estimated cost equation is positive and significant. Hence government take is a significant variable in explaining variations in cost per barrel of production. Fiscal taxation is therefore a determinant of economic performance.

This research results lead to a number of conclusions among which are:

- (a) Fiscal taxation as represented by petroleum profit tax and royalty and as measured through government take as a ratio of revenue is a determinant of operating companies' economic performance in Nigeria.
- (b) There is evidence too that production and time are relevant independent variables in the suggested model, as determinants of economic performance. Given that Nigeria's crude oil production is restricted under OPEC's production quota system, the limitation of production has probably diminished the impact of production volume on cost per barrel as seen in the regression output.
- (c) The limitation of production volume is a form of supply control by OPEC. This has contributed to the significant increases in crude oil prices over the years.

(d) This limitation of production, in turn, possibly contributes to a higher cost per barrel of production, an indication of lower economic performance of the producing companies. With such restricted production, the companies would still be profitable (as highlighted by the level of profit after tax in Table 11). With certain fixed costs (which are independent of the level of activity, and only recoverable over a longer time frame), if production was not restricted but left to the free market, it is possible that the unit production cost per barrel would fall. It is then possible that it would offset the impact of the 72% average government take as a ratio of revenue which appears to have increased the cost per barrel when tax rates were increased in 1972, 1974 and 1975.

Arguably, what OPEC's quota has achieved is to ensure price increases without commensurate increases in profit after tax for the companies, while ensuring increased revenue for the host country, through increased amounts of government take.

(e) It is evident from this result that the bedrock of OPEC's policy is the production quota system, that is, the creation of artificial production volumes through rationing.

(f) For non-OPEC producing countries like the UK, rather than supporting a cartel's policy (against free market conditions), or adopting a regressive tax rate as Nigeria's 85% petroleum profit tax, in addition to royalty, it is preferable to diversify the petroleum tax base to include petroleum revenue tax (PRT) and a lower corporation tax (CT) as it is the case in the UK according to Kemp and Cohen (1980). While petroleum revenue tax captures the advantages of price increases, and improves the UK's government take through the combination of PRT and CT, the abolition of the royalty for fields licensed after 1974, and in January 2003 for all fields in the country, shows the intention to reduce

the negative impact of fiscal taxation through a revenue based tax like PRT on the economic performance of companies operating in the UK.

According to Kemp and Rose (1981), tax changes influence the behaviour of operating companies. For example, tax rates when not favourable could cause the postponement of marginal field development. Also, premature abandonment of fields could result from increasing tax rates. When there is no restriction on production volumes, a favourable fiscal taxation could bring forward in time, field development as well as increases in capital expenditure for exploration and production, whereas when the fiscal taxation is not favourable, or with restricted production, as it is the case in Nigeria, the cost per barrel produced could rise, more so with the attendant fixed overheads.

Given that when oil prices decline some fields become uneconomical, price increases therefore could enhance profitability. However, with significant tax rates or tax rate increases, increases in price may not necessarily create significant economic advantages for the operating companies as they only substantially increase government take. The efficiency of the companies in terms of the average cost per barrel and gross margin is therefore likely to be adversely affected, which is what is observed in this study. The cost per barrel is observed to decrease from \$0.92 in 1970 to \$0.84 in 1973 when oil prices were \$2.0 per barrel in 1970 and \$3.0 per barrel in 1973, yet GTIR increased from 35% to 49% as the tax rate increased from 50% to 55% for the same period. When oil prices increased significantly from \$3.0 per barrel in 1973 to \$12.0 per barrel in 1974, despite a production volume increase of 103%, the cost per barrel which would have been expected to decrease, increased by 21%. GTIR increased from 49% to 64%, indicating that rather than profits improving with a higher oil price and higher production volume, it

was GTIR that increased. It seems therefore that GTIR is an important contributory factor in determining the economic performance of oil companies in Nigeria.

9.2.1 Areas of Further Research

This part of the research has opened additional areas for further investigation, including the following:

1. The impact of Nigeria's oil and gas fiscal taxation system on the flow of investment capital to the country's oil and gas sector. This could be viewed in a comparative study with other developing oil and gas producing economies, which are desirous of attracting critical exploration capital from the international oil and gas petroleum companies.
2. A similar research into the level of revenue loss or gain by OPEC member countries as a result of the production quota. In addition to this, the study could include the potential impact of artificial oil prices on the world economy and the threat they pose for developed countries' energy supply security.
3. The future of OPEC in terms of its ability to retain its production quota policy and the rationale for member states' continued membership.
4. The determination of the extent of the impact of other variables such as price, inflation, exchange rate fluctuations and labour cost on the economics of oil and gas exploration and production in Nigeria, UK and other OPEC member countries.

9.3 Overall Conclusion

In concluding this research, the highlights include the relationship among classical and modern theories of the firm with respect to the concept of the separation of ownership and control, the choice of contract types governing business transactions in the oil and gas exploration and producing industry, the fiscal taxation policy of the host government and the economic performance of the international oil companies operating in Nigeria. The research results have shown that contract types not only affect economic performance but that the production sharing contract type does not maximize shareholders' wealth as the joint venture contract type would. They also show that the retention of large block shares by a single shareholder (like the Nigerian government) does not guarantee maximization of shareholder wealth, contrary to the claim of Shliefer and Vishny (1996) that large shareholders (particularly those with 51% or more) have significant control because they are capable of addressing the 'agency problem'.

Similarly, the research findings tend to corroborate the views of Monsen et al (1968) and Morck et al (1988) that there is a relationship between the separation of ownership and control and the economic performance of firms. The present study adds to this debate by demonstrating that there could be a negation of the maximization of shareholders' wealth even when ownership is not separated from control, but control is latent.

Also, this research has shown through empirical evidence that there is a relationship between contract type, fiscal taxation and economic performance. The results showed that for oil and gas exploration and producing companies operating in Nigeria under the joint venture contract type, even though the companies operate at a higher petroleum profit tax rate (85%) than the companies under the production sharing contract type (57.5%), and

despite the government's ownership of 100% of the assets, the cost of production per barrel of oil is lower, and the gross margin per barrel higher than in the production sharing company. It was also observed through empirical evidence that the cost per barrel of oil produced increased despite increasing oil prices. The ratio of government take (petroleum profit tax and royalty) in revenue also increased significantly with tax rates. This may have been due to the negative effects of increasing tax rates and the artificial production volumes (as a result of the OPEC quota) despite increasing prices. This therefore makes Nigeria's oil and gas exploration and production fiscal taxation policy regressive, confirming the view of Kemp A.G (1992), in his work on the effects of fiscal terms on new oil and gas fields development projects in Nigeria, using net present value (NPV) estimations. In the final analysis, this research has provided through the use of econometric modelling, a link between contract type, fiscal taxation and the economic performance of international oil and gas exploration and producing companies in Nigeria.

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APPENDICES

APPENDIX 1

MULTINATIONAL OIL COMPANIES

HOME COUNTRY

1. EXXONMOBIL OIL CORPORATION	USA
2. ROYAL DUTCH SHELL PETROLEUM CO.	NETHERLANDS / UK
3. BP-AMOCO	UK / USA
4. CHEVRONTEXACO	USA
5. TOTALFINAELF	FRANCE
6. ENI – AGIP	ITALY
7. CONOCOPHILLIPS PETROLEUM	USA
8. BG PLC	UK
9. REPSOL – YPF	SPAIN
10. LUKOIL	RUSSIA
11. AMERADA HESS	UK
12. YUKOS	RUSSIA
13. MARATHON OIL	USA
14. DEVON ENERGY	USA

APPENDIX 2

OPEC MEMBER STATES

1. ALGERIA
2. INDONESIA
3. IRAN
4. IRAQ
5. KUWAIT
6. LIBYA
7. NIGERIA
8. QATAR
9. SAUDI ARABIA
10. UNITED ARAB EMIRATES
11. VENEZUELA

MAJOR NON-OPEC PRODUCING COUNTRIES*

1. USA
2. RUSSIA
3. MEXICO
4. NORWAY
5. CHINA
6. BRAZIL
7. CANADA
8. UNITED KINGDOM

* Individual producers of 2 % (minimum) of total world production in 2003.

APPENDIX 3

100 % STATE OWNED OIL COMPANIES

<u>COMPANY</u>	<u>COUNTRY</u>
STATOIL	NORWAY
PERTAMINA	INDONESIA
ARAMCO	SAUDI ARABIA
IRAN NATIONAL OIL CORPORATION	IRAN
IRAQ NATIONAL OIL CORPORATION	IRAQ
SONATRAC	ALGERIA
NIGERIAN NATIONAL PETROLEUM CORP.	NIGERIA
PEMEX	MEXICO
PETROBRAS	BRAZIL
ECOPETROL	COLOMBIA
PVDSA	VENEZUELA
PETRONAS	MALAYSIA

APPENDIX 4**MAJOR NIGERIAN OIL AND GAS PRODUCING JOINT VENTURES (2003)***

OPERATOR (% INTEREST)	OTHER PARTNERS (% INTEREST)	NNPC (% INTEREST)	SOME MAJOR MAJOR FIELDS
SHELL (30%) AGIP (5%)	TOTAL FINAELF (10%)	55%	Nembe, Ekulama Imo Rver, Yorki Jones Creek, Egwa, Adibawa Olomoro, Odidi
ExxonMobil (40%)	None	60%	Edop, Ubit, Oso Unam, Asasa
ChevronTexaco	None	60%	Meren, Okan, (40%) Meji, Robertkiri, Inda, Middleton Funiwa, Sengana Benin River, N. Apoi
AGIP/ENI (20%)	Phillips (20%)	(60%)	Obama, Obiafu, Agara, M'Bede
TotalFinaElf (40%)	None	(60%)	Obagi, Ukpomam Obodo-Jatumi, Okpoko, Aghigo

* www.eia.doe.gov

APPENDIX 5

MAJOR NIGERIAN PRODUCING OIL FIELDS RESERVE LEVEL (2003)*

<u>Operator</u>	<u>Fields</u>	<u>Reserves</u>
SHELL	Bonga	600
	Bonga South West	600
	Bomu	875
	Cawthorne Channel	750
	Forcados-Yokri	1235
	Imo River	875
	Jones Creek	900
	Nembe Creek	950
ExxonMobil	Edop	733
	Erha	1200
	Ubit	945
ChavronTexaco	Agbami	1000
	Delta	300
	Meren	1100
	Apoi-North-Funiwa	500
	Okan	800
Agip/ENI	Ebegoro	160
TotaFinaElf	Amenem-Kpono	500
	Akpo	200
	Obagi	670

• www.nigerianoil-gas.com

APPENDIX 6

Chronological List of Legislation Affecting Petroleum Operations and Fiscal Regime in Nigeria*

- 1958 Minerals Act
Mineral Oils Act
Oil Pipelines Act**
- 1959 Minerals Amendment Act
Petroleum Profit Tax Act**
- 1965 Oil Pipelines Act**
- 1966 Income Tax (Amendment) Decree**
- 1967 Petroleum Profit Tax (Amendment) Decree**
- 1969 Petroleum Acts
Petroleum (Drilling and Production) Regulations**
- 1970 Petroleum Profits Tax (amendment) Decree**
- 1971 Offshore Oil Revenues Decree**
- 1972 Petroleum Profits Tax (Amendment) Decree**
- 1973 Petroleum Profits Tax (Amendment) Decree
Petroleum (Drilling and Production) Regulations Amendment**
- 1977 Nigerian National Petroleum Corporation Decree**
- 1977 Petroleum Profits Tax (Amendment) Decree**
- 1978 Nigerian National Petroleum Corporation (Amendment) Decree**
- 1979 Associated Gas Re-injection Decree
Nigerian National Petroleum Corporation (Amendment) Decree
Petroleum Profits Tax (Amendment) Decree No. 2
Petroleum Profits Tax (Amendment) Decree No. 3
Companies Income Tax Act (Exemption from Corporation Tax)**
- 1985 Associated Gas Re-injection (Amendment) Decree**
- 1988 Acquisition of Assets (British Petroleum Co, Ltd) Act**
- 1999 Deep Offshore and Inland Basin Production Sharing Contract Decree**

* **www.nigeriabusinessinfo.com (2002)
Oremade B.T (1986)**

APPENDIX 7

Major Dates in the History of Nigeria's Oil and Gas Exploration and Producing Industry*

- 1908 Germany's Nigerian Bitumen Co. and British Colonial Petroleum Started Operation n Western Nigeria**
- 1938 Shell Petroleum Granted License**
- 1951 Shell Drilled First Exploration Well: Iho-1**
- 1953 Mobil Oil Started Operation**
- 1956 Shell Strikes First Oil at Oloibiri First**
- 1958 First Oil Shipment Out of Nigeria**
- 1961 Texaco and Gulf Oil Start Operations, Agip (ENI) Started 1962.**
- 1963 Gulf Makes Nigeria's First Offshore Discovery at Okan**
- 1965 First Offshore Production from Okan**
- 1969 Government Started Dept. of Petroleum Resources (DPR)**
- 1971 Nigeria Joins OPEC**
- 1973 Government Signed First Joint Venture Participation Agreement**
- 1974 Government Takes 55% Equity in Joint Ventures**
- 1975 DPR Upgraded to Ministry of Petroleum and Energy**
- 1986 Government Signs First MOU with Operating Companies**
- 1987 First Indigenous Oil Company Dubri Oil Started Operations**
- 1991 New MOUs Signed**
- 1993 SHELL Drills First Deep Offshore Well**
- 1996 SHELL Discovers Bonga Field**
- 1997 First LPG Shipment By Chevron and First NGLs By Mobil**
- 2000 First LNG Project On-stream**
- 2001 Third Round OF Bidding for Onshore & Offshore Fields**

2003 SHELL's Giant Bonga Field On-stream

*** www.imf.org**

APPENDIX 8

USA GDP Deflator %Change

<u>Year</u>	<u>%</u>
1988	3.9
1989	3.5
1990	3.2
1991	2.8
1992	2.4
1993	2.4
1994	2.2
1995	2.0
1996	2.0
1997	1.8
1998	1.4
1999	1.5
2000	2.5
2001	2.3
2002	1.2

APPENDIX 9

CHRONOLOGY OF EVENTS THAT AFFECTED WORLD CRUDE OIL PRICES

(1973 – 2002)

1. OPEC begins to assert power; raises tax rate & posted prices
2. OPEC begins nationalization process; raises prices in response to falling US dollar.
3. Negotiations for gradual transfer of ownership of western assets in OPEC countries
4. Oil embargo begins (October 19-20, 1973)
5. OPEC freezes posted prices; US begins mandatory oil allocation
6. Oil embargo ends (March 18, 1974)
7. Saudis increase tax rates and royalties
8. US crude oil entitlements program begins
9. OPEC announces 15% revenue increase effective October 1, 1975
10. Official Saudi Light price held constant for 1976
11. Iranian oil production hits a 27-year low
12. OPEC decides on 14.5% price increase for 1979
13. Iranian revolution; Shah deposed
14. OPEC raises prices 14.5% on April 1, 1979
15. US phased price decontrol begins
16. OPEC raises prices 15%

17. Iran takes hostages; President Carter halts imports from Iran; Iran cancels US contracts; Non-OPEC output hits 17.0 million b/d
18. Saudis raise marker crude price from 19\$/bbl to 26\$/bbl
19. Windfall Profits Tax enacted
20. Kuwait, Iran, and Libya production cuts drop OPEC oil production to 27 million b/d
21. Saudi Light raised to \$28/bbl
22. Saudi Light raised to \$34/bbl
23. First major fighting in Iran-Iraq War
24. President Reagan abolishes remaining price and allocation controls
25. Spot prices dominate official OPEC prices
26. US boycotts Libyan crude; OPEC plans 18 million b/d output
27. Syria cuts off Iraqi pipeline
28. Libya initiates discounts; Non-OPEC output reaches 20 million b/d; OPEC output drops to 15 million b/d
29. OPEC cuts prices by \$5/bbl and agrees to 17.5 million b/d output
30. Norway, United Kingdom, and Nigeria cut prices
31. OPEC accord cuts Saudi Light price to \$28/bbl
32. OPEC output falls to 13.7 million b/d
33. Saudis link to spot price and begin to raise output

34. OPEC output reaches 18 million b/d
35. Wide use of netback pricing
36. Wide use of fixed prices
37. Wide use of formula pricing
38. OPEC/Non-OPEC meeting failure
39. OPEC production accord; Fulmar/Brent production outages in the North Sea
40. Exxon's Valdez tanker spills 11 million gallons of crude oil
41. OPEC raises production ceiling to 19.5 million b/d
42. Iraq invades Kuwait
43. Operation Desert Storm begins; 17.3 million barrels of SPR crude oil sales is awarded
44. Persian Gulf war ends
45. Dissolution of Soviet Union; Last Kuwaiti oil fire is extinguished on November 6, 1991
46. UN sanctions threatened against Libya
47. Saudi Arabia agrees to support OPEC price increase
48. OPEC production reaches 25.3 million b/d, the highest in over a decade
49. Kuwait boosts production by 560,000 b/d in defiance of OPEC quota
50. Nigerian oil workers' strike
51. Extremely cold weather in the US and Europe

52. U.S. launches cruise missile attacks into southern Iraq following an Iraqi-supported invasion of Kurdish safe haven areas in northern Iraq.
53. Iraq begins exporting oil under United Nations Security Council Resolution 986.
54. Prices rise as Iraq's refusal to allow United Nations weapons inspectors into "sensitive" sites raises tensions in the oil-rich Middle East.
55. OPEC raises its production ceiling by 2.5 million barrels per day to 27.5 million barrels per day. This is the first increase in 4 years.
56. World oil supply increases by 2.25 million barrels per day in 1997, the largest annual increase since 1988.
57. Oil prices continue to plummet as increased production from Iraq coincides with no growth in Asian oil demand due to the Asian economic crisis and increases in world oil inventories following two unusually warm winters.
58. OPEC pledges additional production cuts for the third time since March 1998. Total pledged cuts amount to about 4.3 million barrels per day.
59. Oil prices triple between January 1999 and September 2000 due to strong world oil demand, OPEC oil production cutbacks, and other factors, including weather and low oil stock levels.
60. President Clinton authorizes the release of 30 million barrels of oil from the Strategic Petroleum Reserve (SPR) over 30 days to bolster oil supplies, particularly heating oil in the Northeast.
61. Oil prices fall due to weak world demand (largely as a result of economic recession in the United States) and OPEC overproduction.

62. Oil prices decline sharply following the September 11, 2001 terrorist attacks on the United States, largely on increased fears of a sharper worldwide economic downturn (and therefore sharply lower oil demand). Prices then increase on oil production cuts by OPEC and non-OPEC at the beginning of 2002, plus unrest in the Middle East and the possibility of renewed conflict with Iraq.
63. OPEC oil production cuts, unrest in Venezuela, and rising tension in the Middle East contribute to a significant increase in oil prices between January and June.
64. A general strike in Venezuela, concern over a possible military conflict in Iraq, and cold winter weather all contribute to a sharp decline in U.S. oil inventories and cause oil prices to escalate further at the end of the year.