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**A Theoretical and Empirical Investigation into the Design and
Implementation of an Appropriate Tax Regime: an Evaluation of
Nigeria's Petroleum Taxation Arrangements**

By

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**A Thesis submitted in partial fulfilment of the requirements of
the Robert Gordon University for the Degree of Doctor of
Philosophy**

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List of abbreviations

AGF	Accountant General's Office
AGO	Auditor General's Office
CBN	Central Bank of Nigeria
CGTA	Capital Gains Tax Act
COMD	Crude Oil Marketing Department
DPR	Department of Petroleum Resource
E&P	Exploration and Production
ETD	Education Tax Decree
FDI	Foreign Direct Investment
FIML	Full Information Maximisation Likelihood
FIRS	Federal Inland Revenue Service
GDP	Gross Domestic Product
HIL	Higher Institutions of Learning
IT	Information Technology
JOA	Joint Operating Agreement
JV	Joint Venture
MAR	Missing at Random
MCAR	Missing Completely at Random
MOCs	Multinational Oil Companies
MOU	Memorandum of Understanding
MPR	Ministry of Petroleum Resources
NAPIMS	National Petroleum Investment Management Services
NASS	National Assembly
NEITI	Nigerian Extractive Industries Transparency Initiative
NMAR	Not Missing at Random
NNOC	Nigerian National Oil Corporation
NNPC	Nigerian National Petroleum Corporation
NOC	National Oil Company
OPEC	Organisation of the Petroleum Exporting Countries
OPL	Oil Producing License

PITA	Personal Income Tax Act
PPT	Petroleum Profit Tax
PPTA	Petroleum Profit Tax Act
PSC/PSA	Production Sharing Contract/Agreement
RAB	Reserve Addition Bonus
RRT	Resource Rent Tax
RSC	Risk Service Contract
SCs	Service Contracts
SPSS	Statistical Package for Social Sciences
UK	United Kingdom
VAT	Value Added Tax

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Dedication

To my parents: Baba Kyari Adam and Hajja Karu Sheriff, who are both departed.

Abstract

This thesis provides a structure for understanding the various issues in the design and implementation of a petroleum tax system. Its main objective is to examine whether the Nigerian petroleum tax system is appropriately designed to achieve the benefits the country desires from its petroleum contractual arrangements.

Informed by the literature reviewed, economic rent theory was adopted as a theoretical framework in the thesis. While other theories could have been applied as a framework, economic rent theory was deemed to be most appropriate because taxes levied on economic rent are not generally perceived to act as a disincentive to the initiation or continuation of business operations.

Informed views on the petroleum fiscal system used in Nigeria were sought from a range of "experts" in the field via a large scale questionnaire. The empirical data collected were then subjected to statistical analysis to determine the overall response patterns of the respondents for each of the 58 variables surveyed. This analysis enabled tentative conclusions to be drawn about the validity of various hypotheses developed in the thesis. Further analysis was carried out to determine and critically assess statically significant responses between respondent groups.

The study revealed that the Nigerian petroleum taxation system was viewed as being well-designed, insofar as it protects the interests of both the government and the international oil companies operating within Nigeria. Furthermore, the "expert" respondents were of the view that a majority of the measures put in place to ensure compliance with the petroleum taxation system have been effective. However, the study revealed differences in views amongst the various groups of "experts" to some questions which suggests that some groups may have articulated views based on partisan values. The differences suggest that the different groups may have vested interests in the petroleum taxation system. Given the role these groups play in the petroleum fiscal system in Nigeria, it is argued that these vested interests may well have negatively affected the design and operation of the petroleum fiscal system. This finding may have important implications for the future design and operation of the Nigerian petroleum taxation system.

The literature reviewed and survey data analysed resulted in a number of conclusions. First, it is argued that it is very difficult to make a single petroleum tax system that serves the needs of different countries. Second, it is suggested Nigeria's petroleum tax regime is predicated upon a desire to capture as much revenue as possible for the government. Third, the thesis concludes that the implementation processes of the Nigerian petroleum tax system are fundamentally weak and require further improvement. Fourth, it is also the conclusion of this thesis that the Nigerian petroleum tax system lacks the capacity for timely review. Finally, it is shown that the Nigerian petroleum tax system is sensitive to changes in tax regulations across oil producing countries.

Keywords: Petroleum, tax, design, appropriate, implementation, Nigeria.

Chapter One

Introduction

1.1 Background to the study

The discovery of oil¹ in Nigeria in 1956 has radically changed the structure of the Nigerian economy from agriculture to oil dependency (Atsegbua, 1999). In 1960, agriculture contributed 49.8% to Nigeria's GDP while oil contributed only 1.1% (Ogunleye, 2008). Since then, the contribution of oil to the GDP has been rising steadily. For example, between 1970 and 1980 the share of agriculture in GDP declined from 47.6% to 30.8% while that of oil rose from 7.1% to 22% and by 2004, oil accounted for 37% of GDP, 70% of government revenues and 95% of foreign exchange earnings, making the country relatively much more dependent on oil than many oil-producing countries, including Norway, Indonesia, Algeria, Venezuela and Mexico (ESMAP, 2004). This trend continues unabated, and by 2008, oil accounted for 39% of GDP, 83% of government revenues and over 95% of foreign exchange earnings (CBN, 2008).

Like any other host developing country, Nigeria had entered into petroleum exploration and production agreements for the exploitation of its oil resource. Through its national oil company, the Nigerian National Petroleum Corporation (NNPC), Nigeria has been in production partnerships with major Multinational Oil Companies (MOCs) via joint

¹ Henceforth the term "oil" and "petroleum" will be used interchangeably.

venture (JV) agreements (Nwokeji, 2007) and production sharing contracts².

The central features of a nation's petroleum tax regime³ are determined, in the main, by the circumstances, needs and objectives of that nation (Otto and Cordes, 2002). Thus, the fiscal policy and regime of one nation cannot simply be copied from that of another nation since tax regimes are the product of specific circumstances (Clark, 2001). Although the bottom line behind the adoption of any petroleum arrangement - concessionary or contractual - is a financial issue that is centred on how costs are recovered and profits divided, which is at the heart of taxation and economic rent theories (Johnston, 1994), host countries are expected to make the tax system attractive for the MOCs in order to encourage inward investment. Thus, the effectiveness of any petroleum arrangement depends largely on the attractiveness of its underlying tax regime which, in turn, depends on the effectiveness of its design and implementation (ESMAP, 2004).

Designing an appropriate petroleum tax system under today's competitive conditions⁴ is a difficult task that requires the recognition and accommodation of many diverging interests (Otto and Cordes, 2002). In

² This is in line with a resolution at the OPEC Conference in 1968, which enjoined its members to acquire participation in the ownership of the concession-holding companies.

³ The term tax regime refers to the various taxes that are imposed in a particular country in a specific period of time. It is synonymous with the term tax system and hence used interchangeably throughout the course of this study.

⁴ The global production of oil during the 1970s and early 1980s was dominated by OPEC member countries (see Kaufmann et al., 2008). Triggered by the Middle East conflicts, the prices of crude oil jumped up during these periods allowing OPEC to boost prices several times by cutting supply needed to cope with the increase in global energy demand (Tussing and Leask, 1999). This OPEC behaviour led to the search for oil in non-OPEC countries, and after two decades of search "oil is coming into the market from new sources in every corner of the globe" (Yergin and Stanislaw, 1998). Today, because oil is being produced in many countries across the globe, inward FDI becomes so competitive that producing nations offer special petroleum tax incentives to attract investors (Tordo, 2007).

particular, the tax system's objectives must capture the interests of the host government and those of the MOCs. Considering this, the Nigerian government specifically identified, among others; escalating country share of project rents, early and stable revenues, administrative simplicity, and adequate incentives to the MOCs as its petroleum tax objectives (NEITI, 2005).

However appropriate these objectives may be, they can only be realised if the interests of the MOCs are also met. Therefore, Nigeria, being one of the world's richest oil-producing countries (UNRISD, 2007), needs an appropriate upstream petroleum tax system that is capable of attracting more Foreign Direct Investment (FDI) for the exploitation of its vast petroleum resources without compromising any of its tax objectives which it designed to achieve.

1.2 Statement of petroleum taxation issues

Notwithstanding the above stated Nigerian petroleum tax objectives, recent events unfolding in the Nigerian oil industry have called to question the appropriateness of the country's petroleum tax system. A petroleum tax system that is appropriately designed is expected to attract to the host government an appropriate level of FDI. From the perspective of MOCs, it may not be inappropriate to suggest that their much needed investments have been stationary, if not decreasing, in the last decade. For example, if we were to use oil reserves as indicator of MOCs' investment, Nigeria's oil reserve stands at 34 billion barrels as at 2004 only to increase to 37.2 billion barrels by 2011, even though

Nigeria had an ambitious of 40 billion barrels target by 2010 (CIA Factbook, 2012).

Lack of adequate investment by MOCs, and the attendant consequences on reserve growth, may not be unconnected with the years of uncertainty in the Nigerian operating environment. These uncertainties may also not be unconnected with the MOCs concerns with the nation's Petroleum Industry Bill (PIB), currently being debated by National Assembly, that seeks to reform the entire Nigerian petroleum sector and to increase government's share of revenue, and greater share of revenue to producing communities as well (EIA, 2012). This development has caused Nigeria massive investment in the sector for over five years, as evidence suggests new investment decisions have been put on hold, with MOCs relocating their investments to neighbouring Ghana, Angola and Libya pending the passage of the bill (ThisDay, 2012).

Similarly, government agencies entrusted with the responsibilities of regulating operations in the Nigerian oil industry appear to have been ineffective (Ameh, 2005) and this has led to the disclosure of certain weaknesses such as low revenue reporting with billions of naira reported as being unremitted to the Federal Inland Revenue Service (FIRS) by the NNPC (Ezigbo, 2010). This is an issue that further questions the administrative effectiveness of the tax system.

Furthermore, it has been asserted that Nigeria's recent trend toward PSC agreements, as noted above, is simply for the generation of money to finance its JV cash call obligations as most of the contracts are with the

existing MOCs (Anthony, 2005; Asiodu, 2009). If this assertion is valid then it raises ethical questions about the process.

Nigeria, according to Igbikiowubo (2010), currently has one of the lowest government take⁵ in the world for PSCs of 42% which is far below the international average of 75%. If a country such as Angola receives 78% and Ghana targets a take of 80% (Igbikiowubo, 2010), then it is worth investigating why Nigeria settles for just 42%.

Moreover, the MOCs have been permitted to operate the Liquefied Natural Gas project located in Bonny Island of the Niger Delta oil region of Nigeria without paying any tax to the government for 10 years in the name of tax holiday just to encourage investment (Igbikiowubo, 2010). The rationale for this position is, *prima facie*, difficult to understand given the needs of its population of 158 million people.

Lack of transparency in the oil sector is also an issue of concern. At present, the local subsidiaries of the MOCs operating in Nigeria do not publish their annual reports. In its nearly five decades of oil production, Nigeria has not recorded accurately how much oil was being produced by the MOCs (Ezigbo, 2010). This, by implication, implies that the country's stated earnings from crude oil production may be problematic.

Moreover, and most importantly, reported cases of tax avoidance and evasion by the MOCs (see Oduniyi, 2004) have exposed loopholes in the tax system. For example, it has been suggested by NEITI that there has been an under-calculation of \$243 million of royalties and an

⁵ Government take refers to the total amount of revenue a host country receives under a petroleum arrangement. It includes revenue from taxes and royalties.

underpayment of \$340 million petroleum profit tax (PPT) by the MOCs (Ezigbo, 2010). All these issues may call into question the appropriateness of the Nigerian petroleum tax system.

Currently, there is no evidence of empirical research having been carried out to test the appropriateness of the Nigerian petroleum tax system. This thesis, therefore, examines the extent to which the Nigerian petroleum tax system achieves the objectives it was designed to meet.

1.3 Objectives and research question of the study

The aim of the study is to critically examine whether the Nigerian petroleum tax system is appropriately designed and effectively implemented to achieve the benefits the country desires from its petroleum taxation arrangements.

The specific objectives of the study are:

1. To critically review the characteristics of petroleum taxation systems in general;
2. To critically review the specific petroleum taxation system that is operating in Nigeria;
3. To critically assess the suitability of the objectives and instruments of the Nigerian petroleum taxation system;
4. To critically examine the effectiveness of the implementation process relating to the Nigerian petroleum taxation system;
5. To critically assess the extent to which the Nigerian government and the Multinational Oil Corporations (MOCs), as well as other

stakeholders perceived how the requirements of the Nigerian petroleum tax system have been complied with; and

6. To critically assess the degree of flexibility that is built into the design of the Nigerian petroleum tax system and to assess if that flexibility allows it to react appropriately to changes in global and local circumstances affecting the oil industry.

These objectives emerged from the following research question:

“How well does the Nigerian petroleum taxation system serve the needs of Nigeria?”

1.4 Hypotheses to be tested in the study

Guided by the objectives and research question above, the following hypotheses are developed for the study⁶

H1₁: Nigeria’s petroleum taxation system is a fair⁷ representation of the interests of the government and the MOCs.

H1₂: Nigeria’s petroleum taxation instruments are suitable for achieving the objectives set for the petroleum taxation system.

H1₃: Nigeria has in place a sound administrative system for petroleum taxation matters.

H1₄: The implementation processes for Nigeria’s petroleum taxation system are effective.

⁶ See Section 5.3

⁷Fairness is a subjective term. What is considered fair by any particular country may differ from the view held by others. Countries ultimately, define, through political institutions what an acceptable fair or equitable tax system is.

H1₅: The compliance mechanisms relating to the Nigerian petroleum taxation system are adequate.

H1₆: The Nigerian petroleum tax system is positively reactive to changes in factors that significantly affect taxation matters.

1.5 Significance and contribution of the study

There are a number of reasons why this study is important. First, the economy of Nigeria largely depends on revenue from the sale of crude oil. As noted above, over 70% of government revenue comes from the sale of oil and there is no strong commitment on the part of the government to diversify its revenue base⁸. Oil is and will remain vital to the economy for the foreseeable future. This thesis, which examines the appropriateness of the Nigerian petroleum tax system, should be of interest to the Nigerian government.

Second, the study also examines the adequacy of the objectives and instruments of the Nigerian petroleum tax system. This review may encourage policy makers to reconsider the tax system and make necessary adjustments that will better facilitate the attainment of government policy objectives without necessarily jeopardising the interest of the MOCs.

Third, the MOCs may find this study useful. The findings of the study may enable the MOCs to understand the significance of balancing their self-interest with that of the interests of Nigeria.

⁸ In 2002 non-oil revenue accounted for 20.84% of total government revenue. This percentage has dropped to 9.23% in 2008 (National Bureau of statistic, 2011).

Fourth, the study adds to the existing literature on petroleum tax design and implementation. In this way, it may serve as useful reference material for those who want to undertake research on the design of petroleum tax systems that will balance the interests of the parties - government and MOCs - in all contractual agreements signed.

Finally, the general public may obtain a better appreciation of how the activities in the upstream sector of the Nigerian oil sector, particularly with regard to the tax system, works to the benefit of the country and the industry.

1.6 Theoretical framework

Property rights are often transferred to industry players in exchange for economic rents. These rents are simply a financial surplus created by the exploitation of natural resources over and above the costs of exploitation which include normal profits (Warnock, 2006). Rents in the petroleum industry are extracted in a number of ways including, among others, prospecting fees, bonus bids for exploration, discovery and exploration, royalties' fees, minimum tax, progressive profits tax and resource rent tax.

In order to understand and make judgement about the facts of the issue being studied, consistent with the views of Al-Quarni (2004), this study adopts economic rent theory as a theoretical framework. While acknowledging the fact that there are other theories that can be applied as a framework in the design of a petroleum tax regime (see Chapter 4), the rent theory is found appropriate because taxes levied on economic

rent do not act as a disincentive on firms as it is not a requirement for the continuation or initiation of business operations (Nakhle, 2008)⁹.

1.7 Research methodology and methods

The methodology a researcher adopts is determined by the sets of assumptions he or she makes when carrying out research. These assumptions are collectively referred to as a "paradigm" which is a mental window through which a researcher sees the social world (Bailey, 1978). A number of frameworks have been developed to define what constitutes a paradigm within the context of social and organisational theory. Of these frameworks, that of Burrell and Morgan (1979) has received wide acceptance (White, 1983). The Burrell and Morgan (1979) model is framed on two independent dimensions based on assumptions relating to the nature of social science and society. These two dimensions are later subdivided into four different but related assumptions of ontology, epistemology, human nature, and methodology. By intersecting the subjective-objective debates in the theory of social science with the consensus-conflict debates in the theory of society, Burrell and Morgan (1979) produced four paradigms, viz; functionalist, interpretive, radical humanist and the radical structuralist.

In this study, Burrell and Morgan's (1979) interpretive paradigm is adopted. Burrell and Morgan (1979) interpretive paradigm has nominalism, anti-positivism and voluntarism as ontological,

⁹ See Chapter 4 for others reasons that informed the choice of the economic rent theory.

epistemological and human nature assumptions which lead to the adoption of ideographic methodology¹⁰.

The data for this study were gathered through a questionnaire. The questionnaire was constructed and administered personally to the respondents by the researcher. Over 60% of the administered questionnaires were returned filled. Respondents' did not agree to be interviewed and the analysis is conducted only on their responses to the questionnaire, which is a limitation of the study.

1.8 Plan of the study

The study is broken down into seven chapters (see Figure 1.1). The present chapter presents a brief account of issues relating to petroleum taxation and goes further to explain the reasons for undertaking this research. The aim, objectives and the significance of the study are also discussed in the chapter. The chapter also discusses the theoretical framework as well as the methodology and methods used in the study.

Chapter two presents a general review of petroleum taxation highlighting the general characteristics for an effective tax system as well as the special features of the petroleum industry that call for a separate petroleum tax regime. The general factors influencing the design of petroleum taxation as well as the objectives and instruments of petroleum tax are also discussed in the chapter. The chapter similarly explores alternative petroleum tax regimes and the choice therefrom. A review of three different areas - policy, functions and institutions - as

¹⁰ See Chapter 5 for the justification of the adoption of the Burrell and Morgan's (1979) functionalist paradigm.

they relate to petroleum tax administration were also discussed in this chapter. This review is used to meet objective 1. In addition the chapter informs the review process relating to Chapter 3.

An overview of the Nigerian petroleum tax system is presented in chapter three. The chapter gives a thorough review of the development of the Nigerian petroleum policy highlighting the various reforms that have taken place in the nation's oil sector since the discovery of oil. This is followed by a general discussion of the Nigerian petroleum tax objectives and instruments. The laws governing petroleum taxation in Nigeria as well as the Nigeria's main petroleum fiscal regimes are also reviewed in this chapter. The chapter concludes by reviewing Nigeria's petroleum tax functions and agencies. The chapter helps meet the second objective set for the study. It also informs the content of the questionnaire to be used in the study.

Chapter four discusses the theoretical framework adopted for the study. The chapter begins by an in-depth review of the adopted theory (i.e. economic rent theory) highlighting its meaning, types, and application in the petroleum industry. This is followed by the reasons for the adoption of the theory as a framework into the design and implementation of petroleum tax regime. Justification for not adopting other theories that could be applied as a framework for petroleum taxation is equally discussed in the chapter.

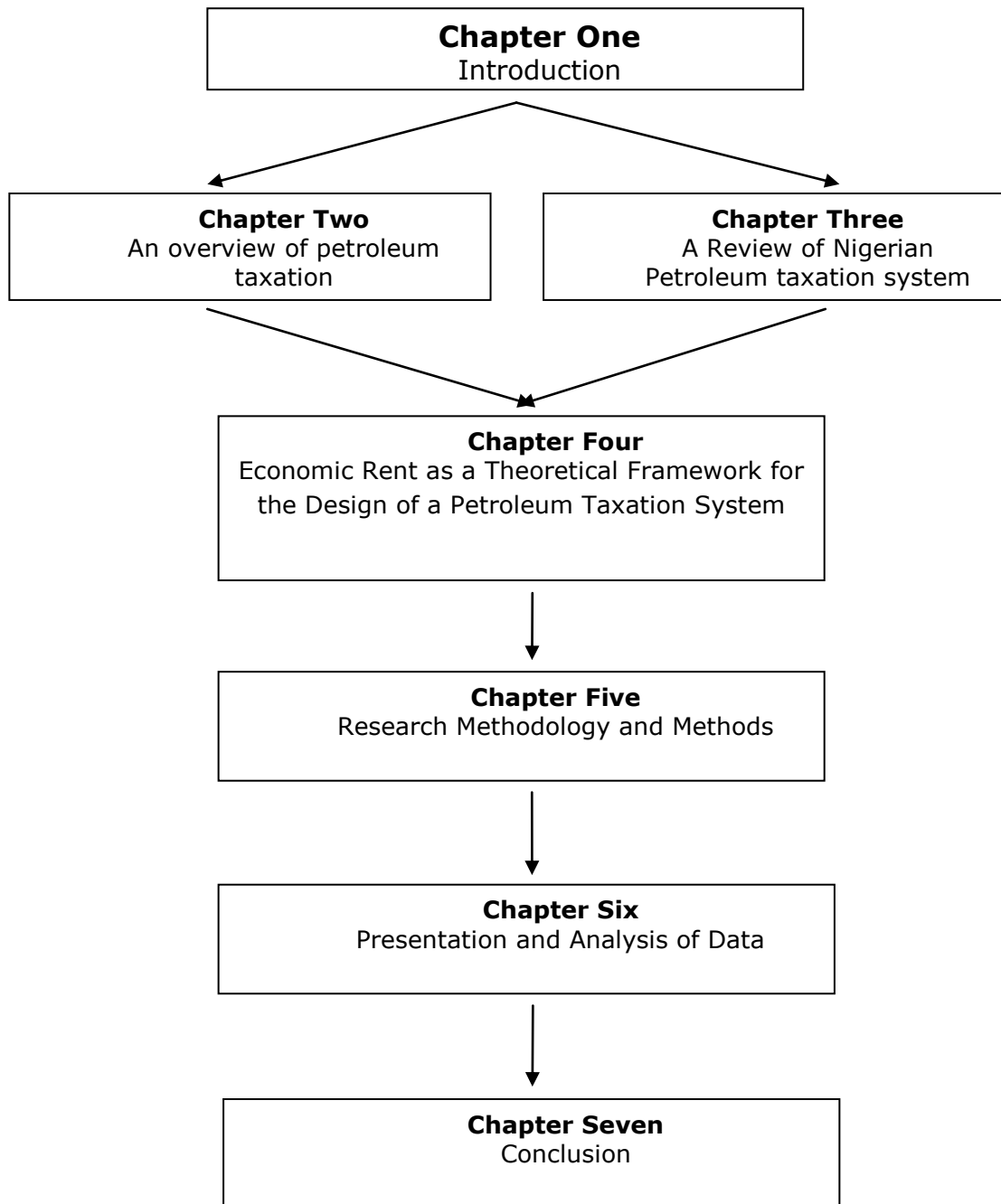
Chapter five presents the research methodology and methods of the study. The chapter begins with a general review of the assumptions made and methods employed in the research. Informed by the general

review, the chapter discusses the philosophical assumptions as well as the research methods and instruments chosen for the study. The data analysis methods and statistical package used in the study are also discussed in the second part of the chapter.

The analysis of the questionnaire based data collected is presented in chapter six. Using the descriptive statistics, the overall view of the respondents on each of the variables were analysed and interpreted accordingly. Follow up Mann-Whitney tests were run in order to determine the differences between the respondent groups.

The seventh chapter concludes the thesis by giving a summary of the thesis, conclusions, the major limitations of the study and a suggestion for possible future research on petroleum taxation.

Figure 1.1: The structure of the thesis



CHAPTER TWO

An Overview of Petroleum Taxation

2.1 Introduction

This chapter reviews literature relating to the characteristics of petroleum taxation in general. The justification for such review is that it may give essential insights into alternative systems applied across the world. These insights may then inform the petroleum fiscal system that might or should be applied in Nigeria. It may also help with the formulation of the research instruments to be applied later in the study.

Governments across oil producing states face the challenge of designing a tax system that meets both their needs and those of the MOCs. In other words, governments try to design tax systems that ensure a fair share of oil revenue for them while at the same time providing sufficient incentives to the MOCs to encourage them to invest in the country. As these objectives are competing rather than complementary, a compromise is required between the government and the MOCs (Stauffer and Gault, 1985). It is this compromise that informs the selection of an appropriate tax system.

A taxation system that is appropriate for a particular country might not be good for another because there is no single taxation system that can meet the requirements of every country (Bird and Zolt, 2003). What is an appropriate taxation system for any country is determined by its circumstances, needs and objectives (Otto and Cordes, 2002; Bird and Zolt, 2003). For example, Bird and Zolt (2003) noted that a country's tax regime should be determined by taking into consideration its economic structure, tax administration capacity, public service needs, and many

other factors. Countries differ in all these aspects but have generally incorporated into the design of their regime taxes that are similar in character such as personal income taxes, corporate income taxes, excise taxes and value added taxes.

The rest of the chapter is divided into six sections. Section 2.2 discusses the general characteristics for an effective tax system with emphasis on the petroleum tax system. This is followed by section 2.3 which reviews the justification for having a special petroleum tax regime. The general approach for the design of petroleum tax system is discussed in Section 2.4. Section 2.5 discusses different types of petroleum tax regimes. The administration of petroleum taxation is the subject of Section 2.6, and Section 2.7 concludes the chapter.

2.2 The characteristics of an effective tax system

The effectiveness of a taxation system depends on the presence of certain basic characteristics or principles (see Nakhle, 2009). In 1776, Adam Smith outlined equity, certainty, convenience and economy as the only four principles of an ideal tax system (Clinton and Duncan, 2005). While the adoption of these characteristics has arguably impacted positively on the effectiveness of tax regimes across oil producing nations, their adoption is, nevertheless, not a necessary condition for a regime's effectiveness. Moreover, because every country has its unique characteristics, it is not always likely that these characteristics are suitable for all countries. This argument is consistent with McGee's (1997) assertion that some of the principles are better than others and some conflict with others. Furthermore, the various contributions made

over the years as to what constitute the principles of an efficient tax system further justify the limitations on the applicability of these characteristics in all countries (see Table 2.1 below).

Table 2.1: Principles for an efficient tax system

Author	Criteria	Title
Carter Report (1966)	Equity, Neutrality, Transparency and Accountability, Certainty, Simplicity Flexibility	The use of the tax system to achieve economic and social objectives
Asprey Report (1975)	Fairness, Efficiency, Simplicity, Growth, Stabilisation	Criteria for Tax Systems
Meade Report (1978)	Incentives and Economic Efficiency, Distributional Effects, International Aspects, Simplicity and Cost of Admin. and compliance, Flexibility and Stability Transitional Problems	Characteristics of a Good Tax Structure
HMSO Report (1981)	Practicality, Fairness, Accountability, Cost of Administration, Fiscal Dimensions, Financial Control	Requirement of a Local Tax System
O'Brien Report (1982)	Equity, Efficiency, Simplicity, Low Admin. and Compliance Costs	Criteria for a Tax System
Ridge and Smith (1991)	Administrative Feasibility, Economic Efficiency, Equity and Accountability	Criteria for Local Tax
Jackson (1994)	Equity or Fairness, Certainty, Convenience of Payment, Economy in Collection and Compliance Transparent	Characteristics of an Efficient Tax System
OECD (1998)	Neutrality, Certainty and Simplicity, Effectiveness and Fairness, Flexibility	Taxation Framework Conditions (for Electronic Commerce)
ICAEW Report (1999)	Statutory, Certainty, Simplicity, Easy to Collect and Calculate, Properly Targeted, Constant Consultation, Regular Review, Competitive	Principles for a Better Tax System
James and Nobes (1997)	Efficiency, Incentives, Equity, Macroeconomic Considerations	Principles of Taxation
AICPA (2001)	Equity and Fairness, Certainty, Convenience of Payment, Economy in Collection, Simplicity, Neutrality, Economic Growth and Efficiency, Transparency and Visibility, Appropriate Government Revenues	Guiding Principles of Good Tax Policy

Source: Mansur et al (2005)

Notwithstanding the above argument, Alley and Bentley (2005) maintain that the principles are so important to the creation of tax policy that they should be upheld in order to ensure successful implementation of various taxes in a manner that satisfies the purposes for which a tax system is designed. Some of these characteristics are discussed below:

1. Efficiency: This refers to a regime's capacity to minimise the impact of tax on private agent's decisions on such things as saving, investing and working (Fitoussi, 2005). The less it distorts these decisions, the more efficient the system is. Thus, an efficient tax regime encourages the productive capacity of the economy and minimises distortions in the allocation of resources. While it is acknowledged that efficiency is a requirement for an effective tax system, the identification and evaluation of areas that require refinement is arguably neither simple nor entirely comprehensible.

2. Neutrality: Garnaut & Clunies Ross (1983:26) defined a neutral tax as one that "would reduce disposable income but not affect decisions on consumption, trade or production". It thus has the advantage of minimising the economic loss due to any given level of taxation as it minimises the misallocation of resources caused by the interference of state treasury in the market processes (Bracewell-Milnes, 1976). He further argues that it does exhibit more fairness between taxpayers than a discretionary tax system which favours one taxpayer relative to another. A tax that is not neutral has the potential of adversely affecting decisions relating to the development of marginal fields in the petroleum sector (Nakhle, 2008). However, since marginal fields do not generate economic rent, they do not generate revenue for the state, and hence many researchers, including Mommer (1999), argue that, under a neutral tax, companies exploit petroleum resources without paying any tax to the government.

3. Equity: This characteristic can be assessed in various ways. First, equity is broadly classified into horizontal and vertical equity. Nakhle

(2008) refers to horizontal equity as the same tax treatment being applied to firms in the same economic conditions or to oil fields having the same characteristics and vertical equity as the same treatment being applied to firms having different characteristics. A tax system that is likely to satisfy this criterion is the progressive tax system in which firms or oil fields with high profitability are taxed heavily relative to firms or fields with low profitability. Second, there is the concern that the current pace of resource extraction might endanger future availability. Equitable tax discourages rapid depletion of resources when prices are low (Nakhle, 2008) and in this sense assures future generations of a fair share of the resources or compensation for those resources that have been depleted. It is noteworthy, however, to emphasise that what is considered fair or equitable by any particular country may differ from the view held by others. Eventually, countries, through political institutions define what an acceptable fair or equitable tax system is.

4. Simplicity: An ideal tax regime is "simple to understand and inexpensive to administer" (Nakhle, 2009:405). Complexity of a tax regime encourages noncompliance which is a serious problem that fosters a climate of disrespect, antagonism, and selfishness in the relationships among citizens and between them and the government and at the same time distorts the distribution of the tax burden and wealth in society (Carroll, 1989; Cowell, 1990; Slemrod, 1992; Kaplow, 1996). Thus, a simple tax system makes it easier for taxpayers to judge the consequences of their actions.

5. Stability: A tax system that changes more often is likely to deter development of projects (Devereux and Morris, 1983). Stability is

important, particularly in oil producing nations, as it affects investors' confidence in government commitment towards petroleum contracts. Moreover, stability allows government to predict its revenue flow with greater certainty (Muriithi and Moyi, 2003). While stability is a desirable characteristic, it cannot be fully achieved in practice. A certain level of flexibility is required to allow the tax system to respond to unexpected changes in external factors such as significant fluctuations in the price of oil.

While acknowledging the fact that upholding these tax principles is an important requirement for successful implementation of the tax system, it is equally worthwhile to recognise that some of these features are mutually in conflict. Below are some examples.

First, a conflict could arise between simplicity and neutrality. A simple tax system is one that is easy to understand and less expensive to administer as discussed earlier. This attribute, however, conflicts with a neutral tax system which is too complex to administer particularly in the petroleum industry where the government is expected to compute different levels of rent and expected return for each oil field (Nakhle, 2008).

Second, there could also be conflict between equity and efficiency. Oil fields have different economic importance and are broadly classified into two: commercial fields and marginal fields¹¹. In consideration of the tax burdens on oil fields, governments provide tax allowances and reliefs to

¹¹ Within the context of petroleum extraction, commercial fields are oil fields capable of producing enough net income and worth developing while marginal fields are fields that lack the capability of producing sufficient net income that make it worth developing at a given time.

marginal oil fields in order to ensure equity. While the provision of these allowances can address the relative tax burden of marginal fields, it can as well lead to misallocation of resources which in turn creates inefficiencies.

Third, neutrality and revenue generation is yet another possible area of conflict of the tax characteristics. A neutral tax system does not influence a company from choosing one investment over the other (Kahn, 1990). It, thus, implies that in petroleum extraction a neutral tax encourages the exploitation of marginal fields. However, since marginal fields do not generate economic rent, under neutral tax system, companies can engage in E&P activities without paying tax to the government.

2.3 Special fiscal regime for petroleum taxation

The basic idea behind a petroleum tax regime is to ensure that a fair share of the petroleum resources accrue to the host government, bearing in mind the interest of the investors (Nakhle, 2008). While it can be argued that all tax policies address this basic objective, in the case of petroleum taxation such an objective assumes a different dimension because of the peculiar features of the petroleum sector. The features of the industry have made petroleum taxation not only especially important for many countries but also challenging (Boadway and Keen, 2008). A review of some of these features is given below.

1. The relative importance of the industry is one of the main features considered. This is argued to be a valid reason for a special petroleum tax regime especially where the sector generates a large portion of a country's foreign exchange earnings and government revenue (Evelyn et

al., 2009). With most of the oil producing nations depending heavily on oil revenue (Boadway and Keen, 2008), it is therefore not surprising that most of these countries have a petroleum tax regime separate from the general tax regime. However, justifying a separate tax regime on the basis of the relative importance of oil sector should not be seen as the most viable option as it is not clear whether those few countries that adopted the unified taxation system are not doing better.

2. The industry is characterised by huge sunk costs and long production periods. The discovery, development, exploitation, and decommissioning of oil fields costs billions of dollars and in most cases take decades (Boadway and Keen, 2009). Most of these costs, Boadway and Keen (2009) further noted, are incurred in the early life of projects prior to the generation of any cash flow and are thus sunk and irreversible. Moreover, the time it takes, for example, between oil discovery and first production is so long that it makes the design of an appropriate tax challenging.

3. The potential for substantial economic rent to be generated is also another feature of the industry that may support the desirability of establishing a separate petroleum tax system. The scope for the existence of such rents is created by the fixity and diverse quality of the petroleum resource (Boadway and Keen, 2009). The importance of the existence of economic rents for the design of petroleum tax system stems from the fact that they can be taxed at a very higher rate without causing changes in behaviour and thus providing a platform for a non-distorting tax (Boadway and Keen, 2009). While it is acknowledged that, generally, taxing economic rent is non-distortionary, the administration

of a tax system based on economic rent may present many difficulties (see Guj, 2012).

4. It is a certain feature of oil rich states that the host government, everything else being equal, will try to increase the income it receives from the petroleum industry and this in turn may fuel the demand for a separate petroleum tax regime. Government revenue from petroleum resources can be substantial not only in absolute terms but also as a percentage of all other revenues (see Table 2.2). If such a revenue stream exists then it may enable the government to reduce borrowing and increase social spending without having to resort to raising income by introducing more general distorting-taxation instruments. Furthermore, oil-rich countries exploit this advantage by making less use of apparently less efficient non-resource tax instruments (Bornhorst et al., 2008). The implication of having a separate tax system on the relatively important oil sector is that governments' neglect of the non-oil sectors is likely to be exacerbated as it does not rely on the expansion of these sectors for future revenue. With the uncertainty that surrounds the global oil market, any significant drop in oil prices is likely to cause a negative impact on the economies of these nations.

5. Uncertainty is yet another marked feature of the petroleum industry. Uncertainty in the petroleum industry surrounds project life from exploration through development to decommissioning, and comes in many forms including: i) geological uncertainty which relates to the questions of quantity, quality and method of extracting crude oil; ii) volatility of output prices which is, perhaps, the most marked feature of the industry; and iii) policy uncertainties which might arise from broader

political risks in dealing with potentially unstable regimes (see Woods, 1970). All these impact on the decision of the MOCs on where to invest their funds and which arguably influence government decisions relating to establishing a separate petroleum fiscal regime.

6. There is also the issue of information asymmetry. It is a genuine problem applicable to most taxation and regulatory circumstances, but its impact is higher in petroleum taxation because of the special nature of the petroleum industry especially with respect to technological complexity and volume of intra-group and transnational economic transactions (Osmundsen, 2008, 1998). With the MOCs having better knowledge about their incomes and costs, and income opportunities in other countries than the host government, there is the chance that the tax paid by the MOCs would be lower than what it should have been (Osmundsen, 2005). These information asymmetries make the extraction of rent difficult as the MOCs are not interested in sharing their superior information with the government (Boadway and Keen, 2009). Although policy makers can mitigate, to some extent, the information asymmetries by, for instance, undertaking geological surveys and using industry-specific consultancy services, such asymmetries, as noted by Boadway and Keen (2009), are likely to remain especially in countries with limited domestic capacity to match against the well established MOCs.

These characteristics, however, do not unequivocally justify the adoption of special fiscal terms and therefore the arguments for special petroleum tax regimes are not conclusive. Where, for example, a country's administrative capacity is weak, the creation of different tax structures within the same country might run counter to the argument of

maintaining a simple tax system. There is also the possibility that the stability of the special tax system might be at risk should governments become discontent with revenue outcomes. Similarly, there are suggestions that MOCs usually prefer to be taxed under a general tax system which incorporates specific characteristics relevant to the resource industry (see Evelyn et al., 2009).

Despite the arguments presented above, a petroleum tax system that is designed in consideration of the special features of the petroleum industry may carry with it certain advantages. Robinson and Morgan (1978) identified one such advantage which is the ability of the tax regime to capture as much economic rent as possible for the government from the production of crude oil.

Similarly, another advantage might be the creation of the facility to easily and transparently distribute revenue generated from the petroleum resources to society as a whole; the revenue distributed should more or less equate to the taxation extracted. Many of the tax instruments, Nakhle (2008) noted, have been designed almost entirely on distributional bases. Petroleum resource is mainly distributed between the government and the MOCs and the manner in which the resource is distributed is spelt out in the agreement signed between the two parties.

Furthermore, the desire to mitigate petroleum-related economic problems such as the Dutch Disease, which negatively affects the global

competitiveness of non-oil sectors, is another function that a well-designed petroleum tax system may achieve¹².

A special tax for petroleum operations is also used to manage demand. Where there is a variation between domestic and international price of energy, for example, indirect oil taxation can be used to manage the effects of such variations. Government may step in by increasing point of sales tax on petroleum products to discourage wasteful behaviour.

Finally, a petroleum tax regime can also be used to control pollution emissions from energy use. Various environmental taxes are used as tools to get competitive petroleum prices and at the same time create market-based incentives for encouraging environmentally friendly behaviours (EU, 1992).

¹² The Dutch Disease is a term that describes a decline in a country's exports due to appreciation of the exchange rate after the discovery of natural resources such as oil (Barder, 2006). In other words, it is simply the effects of a shift in factors of production away from other sectors as a result of discovery of a natural resource, which ultimately leads to decline in overall productivity growth and reduction in long term welfare. Using the tax system, a Dutch Disease can be mitigated through a tax on sales or exports. This will shift the supply curve of the good so as to approximate its marginal cost to the level of other goods (Bresser-Pereira, 2008).

Table 2.2: Petroleum receipts as a percentage of Government revenue

Countries	%
Algeria	72
Angola	76
Bahrain	74
Congo, Republic of	73
Iran	65
Iraq	97
Kuwait	79
Libya	77
Nigeria	78
Oman	83
Qatar	68
Saudi Arabia	72
United Arab Emirate	69
Yemen	72

Source: Boadway and Keen, 2008.

2.4 General approach to the design of petroleum taxation

The general approach to the design of a petroleum tax system involves: i) the consideration of broad industrial factors influencing tax design; ii) the objectives against which the tax system is judged; and iii) the ranges of tax instruments necessary for meeting such objectives. These processes are discussed in the following sections.

2.4.1 Industry factors influencing tax design

Daniel (2004) identified three important factors in the petroleum industry that inform the design of a petroleum tax regime. These factors are discussed below:

The first factor to consider is the fiscal regimes prevailing in other countries with similar prospects. Designing a tax regime that is far out of line with what is obtained in other countries has the potential of making the MOCs diverting their investments elsewhere (Daniel, 2004). This position is consistent with Bird and Bolt's (2003:5) assertion that "one way to get an idea of what matters in tax policy is to look at what taxes

exist around the world". While it is understandable that tax systems around the world may influence a country's choice of fiscal regime, they should not, however, be seen as an inviolable yardstick against which to measure its success. What matters most are the underlying issues that inform the nature of taxation system. For example, a country that charges a seemingly high tax rate of 80% but is politically stable may be more acceptable for the MOCs rather than an unstable country that charges a tax rate of 40%.

A country's tax structure is the second factor, according to Daniel (2004), which is worth considering when designing a petroleum tax system. Investors are interested in the overall impact of the tax regime relating to both the share the government takes as taxes and the way in which the tax is imposed over the life of a petroleum field. The ability of a government to carefully structure its tax system to reduce the likely risks affecting the MOCs has the advantage of securing, in the long run, more FDI as well as larger tax revenue over the life of petroleum fields (Daniel, 2004). However, structuring a tax system that reduces the risks to the MOCs is not that easy. The presence of high geological risks in the exploration stage incentivises the government to structure their tax systems in a way that mitigates the risks to MOCs. However, when exploration becomes successful the possibility for ex-post renegotiation of contracts by the host governments increase (Manzona, 2000).

The pursuit of tax neutrality with respect to petroleum activity vis-à-vis other sectors is the third factor to consider. Government, according to Daniel (2004), should realise, in its pursuit for a neutral tax structure in

respect of petroleum activity, that it is not simply a matter of setting the same overall taxes as with other sectors. Under a neutral petroleum tax regime the tax base equates to petroleum rent and has no distorting effects on development and operational decisions (Osmundsen, 2008). Thus, host governments should strive to ensure that their tax regime is neutral in order to achieve their goal of attracting and maintaining FDI. Although the attraction of FDI in the oil sector is a desire for host governments, tax neutrality has the implication of discouraging investments in other sectors of the economy as it involves allotting special tax incentives to the oil sector (Daniel, 1995).

2.4.2 Objectives of petroleum taxation system

With the above factors in mind, the design process is rolled up by clearly specifying the objectives against which the taxation system is judged. As Nakhle (2008:5) stated the broad objective of petroleum taxation system is to capture for the state:

“a fair share of the wealth accruing (from the extraction of the resources) whilst encouraging investors to ensure optimal economic recovery of those hydrocarbon resources”

A number of specific objectives are referenced in the literature. Some of these, as identified by ESMAP (2004), are discussed in the paragraphs that follow.

First, achieving a fair share of revenue for the state is one of the main objectives of petroleum taxation. It is generally agreed, according to ESMAP (2004), that a major share of the project economic rents should go to the owner of the resource, in most cases the government. What is

an appropriate share to the government, however, depends on a number of considerations, which include the resource base and prospects of the host country, perceived or country specific risks, and the levels of revenue take in other countries (ESMAP, 2004).

Second, a petroleum tax system should aim to be non-distortionary in nature. This implies it should be a neutral tax system and is arguably the foundation for successful investment in petroleum activities. A neutral petroleum tax system, in line with the discussions in section 2.2, suggests that taxes imposed on petroleum projects do not change the pre-tax commercial decisions and production processes of the MOCs. Tax neutrality can be approximated through the imposition of taxes such as resource rent tax (RRT), income taxes and sliding scale technique, ring fencing, and cost uplift, among others.

Third, provision of adequate incentives for investors to contain costs of their E&P activities. Where costs are high, the profit available for distribution between the host government and the investor will be low. The tax system should, therefore, be designed to give every incentive possible to the investors to contain costs.

Fourth, adequate provision of how the oil revenue should be shared among the different levels of government and indeed the oil producing community. Where, for example, the petroleum resources are concentrated within one or two regions of a country, the tax system should be designed in such a way that allocation of revenue from petroleum taxes is in the best interest of the entire country.

Fifth, there should be accuracy of the timing and stability of revenues. Governments may place a premium on receiving early revenues in order to enable them, for example, to address some urgent budget issues. Against this background, governments are more likely to favour tax systems that will guarantee a minimum level of stability in tax revenue. Depending on factors such as budgetary constraints and the stage of maturity of the oil sector, governments may need to decide on the types of incentives to offer that will ensure they receive tax revenue within the desired timeframe whilst maintaining reasonable stability in the system.

Sixth, a petroleum tax system should be progressive. This implies that the government take may vary as a progressive function of project profitability. Many producing nations attempt to make their petroleum tax systems progressive. A progressive regime has the advantage of increasing government revenues without negatively impacting on incentives to undertake exploration and production activities.

Goldsworthy and Zakharova (2010:7) present a summary of these objectives in a tabular form as seen in Table 2.3 below:

Table 2.3: Objectives of Petroleum Taxation

Objectives	Description
Neutrality	Avoids investment and production distortions. The fiscal regime should not alter the order in which the projects are undertaken; nor should it change the speed of extraction, decisions about reinvestment, etc.
Capture of Rents	Satisfies the neutrality criterion, enables the government to share in the upside of projects, and supports the government's role as owner of the oil
Stability and timing of revenue	Provides a stable revenue stream to government. Government favour stable and early revenue. However, the counterpart to this goal is a transfer of risk to the investor and delayed payback. This objective should be less of a concern when there are multiple oil fields at different stages of development.
Progressivity and adaptability	Ensures progressivity. A progressive regime yields a rising government take as the project's profitability increases. A system that responds flexibly to changes in prices and costs might be perceived as more stable, lowering the investor's perceived risk of regime stability and avoiding the rent-seeking behaviour associated with discretionary changes. It also ensures a low tax burden on marginal projects
Administrative simplicity and enforceability	Support ease of administration. To the maximum extent possible, given other objectives, the regime should be transparent and simple to administer. It also be designed to avoid leakages through abusive transfer pricing and other tax
International competitiveness	Supports competitiveness. Adjusting for investor's perceptions of country risk, the regime should be competitive with those of other countries in order to attract investment

Source: Goldsworthy and Zakharova, 2010

2.4.3 Petroleum tax instruments

In order to meet the above objectives, countries across the world apply a wide range of tax instruments (ESMAP, 2004; Goldsworthy and Zakharova, 2010). These instruments are variously classified because different jurisdictions apply different names to the same or similar instrument. Conrad (1980), for example, classified them into three broad categories: output related taxes, profit taxes and property taxes. Otto and Cordes (2002), on the other hand, also give three classifications, namely: indirect taxes, direct taxes and quasi-taxes. Evelyn et al. (2009) suggests the two broad classifications of profit-based taxes and production-based taxes.

A general description of these instruments on the basis of Otto and Cordes' (2002) classification is made in the sub-sections that follow. The

choice of this classification is simply based on the ground that it has been the most common way of classification in the tax literature (Evelyn et al., 2009). Otto and Cordes (2002) classified petroleum tax instruments into three categories with each based on a different rationale and impacting in a different way on a company's decision.

2.4.3.1 Indirect taxes

This is the first of the three categories and is imposed against the petroleum deposit or the input. According to Otto and Cordes (2002), the common types of indirect taxes imposed are those that impact on a project's variable costs and include, inter alia, royalty taxes, import duties, and value-added taxes.

Royalty is an amount paid for the use of someone's property for the purpose of economic gain (Nakhle, 2008). Royalty can also be considered as a factor payment for mineral resource extraction that is similar to factor payments in respect of capital and labour inputs (Conrad et al, 1990). Royalties, according to Evelyn et al. (2009), are classified into three types; unit-based, value-based and profits-based. Unit-based royalties are those that are assessed on either volume or weight and are measured on a predetermined point in time. Royalties based on production output are termed value-based. These types of royalties are assessed in many different ways at different stages of the production process. A profit-based royalties system is similar to the concept of economic rent and is charged against the profit of a project. Similarly, royalties can be calculated on a gross basis or a net basis, with the latter being common for petroleum projects.

As a price for resource extraction, royalty plays a role in determining the pace of investment. A country's petroleum resources should be left in the ground if the MOCs are not ready to pay this price which is the opportunity cost of extraction. Since oil producing nations depend heavily on oil revenue, there is no reason to provide the resource to the MOCs for free. However, under some neutral profit-based royalty regimes, governments stand the risk of receiving little or nothing from the ownership of its petroleum resource (Nellor, 1995).

Despite the argument above, the conservative suggestion in the literature is to discourage the employment of royalties. Advocates of this argument are of the view that royalties raise the marginal cost of resource extraction and this has the implication of discouraging the development or otherwise marginal projects (Nellor, 1995).

An Import duty, on the other hand, is employed by most governments because it is an attractive way of securing an up-front revenue flow. Given the substantial import needs during project development revenue from this source is more front-loaded than royalty payments (Sunley et al., 2002). However, given the massive import needs of the MOCs during the exploration and development stages of projects, import duties payment on materials and equipments has a direct impact by lowering the net present value of projects and increasing their risk profiles (Tordo, 2007). The desire to attract more investments, Baunsgaard (2001) noted, has made many oil producing nations provide import duty exemptions for the MOCs. These exemptions are sometimes given with

conditions. For example, exemption will be given on condition that the imported equipment will be re-exported back after its use.

Value Added Tax (VAT) in the petroleum sector is most often influenced by administrative issues rather than tax policies (Sunley et al., 2002). This is particularly the case in developing countries where the desire for large investment in the oil sector is large and at the same time most of their petroleum output is exported (Sunley et al., 2002). VAT, just like import duties, has a negative impact on projects' net present values and risks profiles. Hence, the MOCs prefer exemptions for at least specialised inputs of materials and equipment used in E&P activities.

A summary of the concepts, merits, and demerits the indirect tax instruments as well as their effects on investment decisions of the MOCs is presented in Table 2.4 below

Table 2.4: Summary of indirect petroleum tax instruments

	Royalties	Import duties	Value added taxes
Concept	<ul style="list-style-type: none"> Commonly used Based on volume of production or value of export Calculated on a net-back basis 	<ul style="list-style-type: none"> Applied to all imported materials/equipments Limited use as a fiscal instrument Most producing nations provides for import duties exemptions 	<ul style="list-style-type: none"> Normally charged on destination basis (import are taxed and export zero rated) Exemptions provided on projects that export
Merits	<ul style="list-style-type: none"> Ensures an upfront revenue stream as production starts Can be estimated with a degree of certainty Easy to calculate, collect and administer 	<ul style="list-style-type: none"> Ensure an upfront revenue stream as production starts Ensure imported materials and equipments are re-exported after use 	<ul style="list-style-type: none"> Help to improve tax compliance and enforcement More transparent and has less burden on the investors
Demerits	<ul style="list-style-type: none"> Regressive in nature Distort investment decisions if high 	<ul style="list-style-type: none"> Goods processing is delayed Lists of exempted materials and equipments increase administrative burden 	<ul style="list-style-type: none"> Timely payment of refund may be difficult if administrative system is weak Complex to administer
Effects on investment decisions	<ul style="list-style-type: none"> Distort the levels of oil discovery if it the most instruments used Deter investments since it is payable whether profit is made or not Reduce economic life of project if economic cut-off rate is increased 	<ul style="list-style-type: none"> Reduce projects' net present value Increase projects' risks profile 	<ul style="list-style-type: none"> Reduce projects' net present value Increase projects risks profile

Source: Based on Section 2.4.3.1

2.4.3.2 Direct taxes

These taxes are imposed on a company's profits in its position as a separate legal entity¹³. In order to accommodate the risk in the petroleum industry and to attract more investments, many jurisdictions make provisions in their petroleum tax regime that modify the timing of direct taxes. For example tax holidays, depletion allowances, accelerated capital allowances, permission to carry losses forward or backward and many other tax credits as among the most used of these provisions (see Otto and Cordes, 2002). Direct taxes imposed in the petroleum sector include, inter alia; income taxes, resource rent taxes and withholding taxes on dividends.

Daniel (2004) asserts that an income tax is levied on companies engaged in petroleum operations at a relatively higher rate than companies in other sectors in order to enable the host governments to capture a larger share of the economic rent. In order to guard against postponement of tax revenue from direct taxes, governments' often ring-fence tax accounts¹⁴. However, because ring-fencing is considered as a disincentive by the MOCs, the extent of ring-fencing, according to Sunley et al (2002) depends upon two factors: i) government preference for short term modest revenue against long term greater revenue. By allowing the MOCs to deduct the costs of developing fields from the revenues of producing fields, more exploration and development activities may come

¹³ A company is said to be a legal entity if it can sue and be sued

¹⁴ Ring-fencing, in relation to upstream petroleum taxation, is the accurate drawing of boundaries around projects, or sets of projects, such that fiscal calculations are performed in the proper sequence and honour the proper interrelationships among the various fiscal components (Smith, 2005). Ring-fencing, Smith (2005) further asserts, is either directly or indirectly provided for in every petroleum tax system across the world. Such provisions specify the level of portfolio (e.g. field, block) at which tax instruments are calculated.

up in the long run thereby increasing the taxable base which leads to the generation of more taxes to the government and ii) the bargaining powers of the governments which may depend on the maturity stage of the industry and the financial needs of the host government.

Where income taxes are progressive, they tie the level of taxation to factors that are linked either to the level or price of crude oil which in turn enables the government to take part in the upside of projects if economic conditions are favourable. The problem, however, is that the normal parameters used in determining progressive rates of tax are not fully related to project's rate of return. Accordingly, this type of income tax may not be neutral for investment purposes.

Petroleum resource rent tax is a direct tax which is defined as "the value of the product of a petroleum resource minus all the necessary costs of production, including the minimum returns to capital required, prior to the investment decision, to induce investment" (Daniel, 2004:7). This tax has a zero rate up to the point where a threshold rate of return is earned on investment. In other words, the tax becomes applicable only when a project's cumulative cash flows exceed its cumulative costs.

This tax encourages MOCs to shift income into tax haven countries¹⁵ or engage in wasteful practices which would have been avoided by a properly designed ordinary income tax (Jenkins, 1974). Therefore, for a resource rent tax to be efficient each contract area needs to be ring-

¹⁵ Tax haven countries are those countries in which some types of taxes are either imposed at a very low rate (relative to what is obtained elsewhere) or are not being levied at all. In the words of Assogvabi's (2008:2) tax haven "is any country whose laws, regulations, traditions and in some cases, treaty arrangements, make it possible to reduce one's overall tax burden."

fenced to curtail the practice of off-setting the costs from one field against the revenues of other fields.

Withholding taxes: withholding taxes are imposed on services, loan interests and dividends as a means of ensuring compliance with income tax payments. Otto and Cordes (2002) assert that withholding taxes, particularly on declared dividends, are used as both an instrument for obtaining additional income taxes as well as a tool for discouraging the repatriation of profits and thus encouraging local reinvestment.

Table 2.5: Summary of Direct Petroleum Tax Instruments

	Income tax	Resource rent tax	Withholding tax
Concept	<ul style="list-style-type: none"> Usually included within the income tax regime and often at a higher rate Most often progressive in order to ensure that government share from the upside of a project 	<ul style="list-style-type: none"> Usually tied to project profitability It is deferred until project's costs are recovered i.e. income to the government is delayed 	<ul style="list-style-type: none"> Imposed on services, interests and dividends Primary purpose is to ensure compliance
Merits	<ul style="list-style-type: none"> Since it is within the nation's income tax regime, its assessment, collection and monitoring are easily captured Capturing assessment and collection lowers administrative difficulties 	<ul style="list-style-type: none"> It is a neutral tax system Delay in the provision of income to the government can be avoided when combined with royalty and or income tax 	<ul style="list-style-type: none"> Ensures faster generation of revenue Discourages repatriation of profits Involves little or no cost of collection
Demerits	<ul style="list-style-type: none"> Income tax, if progressive, makes government to share from the downside of projects 	<ul style="list-style-type: none"> It only provides government with income when target return is reached Relatively more difficult to assess and monitor 	<ul style="list-style-type: none"> High rates likely to affect operational performance of the investors Locks up investors' capital with tax authorities
Effects on investment decisions	<ul style="list-style-type: none"> May not be neutral because the parameters used to determine income tax rates are not necessarily related with investors' rate of return 	<ul style="list-style-type: none"> Relatively neutral and hence reflects the MOCs' risk 	<ul style="list-style-type: none"> Affects investors cash flow

Source: Based on Section 2.4.3.2

2.4.3.3 Quasi taxes

These are non-tax instruments that are employed by oil producing nations to generate revenue. These instruments are relatively of lesser importance than the taxable instruments in terms of revenue generation

(Sunley et al, 2002). However, they influence a project's profitability and impact indirectly on taxation (Otto and Cordes, 2002).

One non-tax instrument that is widely employed is bonuses. There are various bonuses paid to the host country by MOCs and these mainly comprise signature, production and discovery bonuses. A signature bonus is a one-off payment made by an MOC on signing a contract. It captures economic rent to the host government irrespective of the outcome of the exploration activities. A discovery bonus, although less frequently encountered (Martin, 2004), is also a one-off payment following the declaration of a commercial discovery and after approval of the MOC's development plan by the National Oil Company (NOC). A production bonus, in contrast, is recurring and paid when production reaches a certain level or when a predefined volume has been produced.

Bonuses are easy to be administered and, as noted above, also provide governments with an early form of income. However, high bonuses may discourage investors who are risk-averse especially if perceived political or geological risk is high.

Production sharing is also another quasi tax used. It was first applied in Indonesia in 1966 (Mustafaoglu, 1981) and since then various versions have been developed. However, the main characteristics of any production sharing contract, Mustafaoglu (1981) noted, are threefold; cost recovery provisions, profit split between the host government and the MOC, and the various taxes. The cost-recovery provisions allow the MOCs to first recover their exploration and development costs from the annual production which could be a fixed percentage or an amount of oil

equal to its costs amortised over a number of years. Once costs are recovered, the remaining production is shared between the parties - the government and the contractor - on a predetermined basis.

A production sharing agreement can be designed to provide flexibility in the fiscal system to suit a particular project without changing the overall fiscal regime. Although this may benefit both the government and the MOCs, it may, however, involve design and administrative difficulties which have the potential of rendering the contract difficult to administer, particularly in terms of the determination of allowable costs.

Governments may participate in the equity of petroleum projects for both economic and non-economic reasons. Economically, governments participate strategically and operationally in order to try to secure a higher share of revenue generated from profitable projects (Baunsgaard, 2001). For non-economic reasons, on the other hand, motivation for participation includes the desire to be involved in the ownership operations, to facilitate the transfer of technological know-how and to control development (Otto and Cordes, 2002; Baunsgaard, 2001). Whatever the motive, government participation, according to Otto and Cordes (2002), can be through: i) acquisition of free equity position as a percentage of total equity investment, ii) acquisition of equity in the same way as any other joint venture partner, or iii) any other means in between the first two approaches.

There are a number of implications resulting from equity participation. First, there is the possibility of conflict of interest resulting from the role of the government as regulator and at the same time being a

shareholder. The government may be in an advantage position when it assumes only the role of taxing and regulating projects rather than being involved directly as an equity shareholder (Sunley, 2002). The likelihood of a government's inability to meet its cash call commitments (if it is an equity holder) is also an issue that may influence the MOC's investment decisions. This is so particularly where the cash calls on governments are paid out of production, in which case the overall burden of financing the project is left with the MOCs (ESMAP, 2004).

Environmental protection has been a matter of global concern for quite some time now. Various environmental organisations at both national and international levels (e.g. Greenpeace, Earth First, United Nations Environment Programme, and European Environment Agency) are formed with the motive of promoting environmental policies development. This lobby for environmental protection encouraged governments, particularly of mineral resource-rich countries, to respond by making it mandatory for the MOCs to pay for any environmental damages and to internalise environmental preservation costs in the costs of their operations (Otto and Cordes, 2002).

Although the tax treatment of environmental obligations is important to the MOCs, Fullerton et al (2008) noted that environmental tax cannot assure a particular environmental impact as the MOCs' behavioural responses may be lower or greater than expected. Thus, where accurate attainment of environmental objective is the main concern, this may be a significant downside to environmental taxation.

Table 2.6: Summary of Quasi petroleum tax instruments

	Bonuses	Production sharing	Equity sharing	Environmental protection
Concept	<ul style="list-style-type: none"> • Paid upon signature of E&P agreement, discovery, etc • Affect project risks by increasing E&D economic threshold 	<ul style="list-style-type: none"> • Provide the government with option to participate • Characterised by recovery of cost, profit split and various taxes 	<ul style="list-style-type: none"> • Participation may be through: free acquisition of equity, equity as in any other JV, and other means between the two • Participation is for economic and non-economic reasons 	<ul style="list-style-type: none"> • It is a global concern • Encourages government to make it compulsory for investors to pay for environmental damages
Merits	<ul style="list-style-type: none"> • Easy to administer • Provide early revenue 	<ul style="list-style-type: none"> • Provide fiscal flexibility • Risks associated with E&P activities are avoided by host countries 	<ul style="list-style-type: none"> • Results in increased share of government revenue • Facilitates the transfer of technology 	<ul style="list-style-type: none"> • Corrects divergence between private and social costs • Shifts financial risk to the investor
Demerits	<ul style="list-style-type: none"> • Large bonus depends on overall fiscal terms, country's risks 	<ul style="list-style-type: none"> • Decommissioning liability might not be avoided • Regulatory checks and balances may be lacking 	<ul style="list-style-type: none"> • Conflict of interests from the role of government as regulator and shareholder • Government may not honour its cash call commitment 	<ul style="list-style-type: none"> • Complex to administer • Cannot assure specific environmental impact
Effects on investment decisions	<ul style="list-style-type: none"> • High signature bonus may discourage risk averse investor • Commerciality increases the economic cut-off rate of a project 	<ul style="list-style-type: none"> • It is the most preferred option for the investors. Hence, it encourages FDI inflow 	<ul style="list-style-type: none"> • Participation is regarded as deterrent to investment by many investors • Where cash calls are paid out of production, the investor bears the burden of raising the entire finance 	<ul style="list-style-type: none"> • Ability to deduct environmental cost lowers compliance costs

Source: Based on Section 2.4.3.3

2.4.3.4 Special petroleum fiscal provisions

While the above tax instruments are designed to capture as much revenue as possible for the government, some special provisions are often included in petroleum fiscal systems in order to modify the timing and or magnitude of the revenue streams. These provisions, Tordo (2007) asserts, are normally intended as incentives aimed at attracting investors, accommodate unique features of a petroleum asset, or to influence the investors choice toward specific public policy goals. Some of the most commonly used provisions are presented in Table 2.7 below.

Table 2.7: Special petroleum tax provisions

Accelerated capital cost allowances	Assets are depreciated in many ways over their expected life (useful life of equipment, economic life of the reservoir). The methods used in the industry are: (a) straight-line (equal annual deductions); (b) declining balance (straight-line depreciation calculated for the remaining value of the asset each year); (c) double declining balance (doubles straight-line depreciation for the remaining value the asset each year); (d) sum of year digits (based on an inverted scale that is the ratio of the number of digits in a given year divided by the total of all years digits); and (e) unit of production (the capital cost of equipment, after deduction of the accumulated depreciation and of the salvage value, is multiplied by the ratio between the total production in a year and the recoverable reserves remaining at the beginning of the tax year).
Depletion allowances	The depletion allowance is the deduction from gross income allowed to investors in exhaustible commodities (such as minerals, oil, or gas) for the depletion of the deposits. The theory behind the allowance is that an incentive is necessary to stimulate investment in this high-risk industry: as the reservoir depletes, the company will need to undertake more exploration to find new reservoirs. The depletion allowance is meant to subsidize further exploration. Since the industry is a global one, it is quite likely that the depletion allowance may be used to subsidize exploration in competing countries. For this among other reasons, depletion allowances are granted/have been granted by only a few countries
Interest deduction rules	Project financing is quite common for large projects or for small oil companies. Normally interests on loans are deductible from taxable income and qualify for cost recovery. Inter-company interests may also be cost recoverable and tax deductible, if on an arms-length basis.
Loss carry forward	This refers to the ability of a company to "carry forward" losses from one year to offset tax liability in future years. When limitations apply the loss can be carried forward for a set number of years (normally 5 to 7) after which the benefit expires. In most cases, unlimited loss carry forward is granted.
Investment credits	In some countries, governments provide an incentive to investors by allowing them to recover an additional percentage of tangible capital expenditure (also known as investment uplifts or "allowances" and investment credits). In some cases investment credits can be taxable
Tax holidays	When capital investment in a project is considerable, the host government may grant tax holidays to investors. Tax holidays provide a valuable advantage to investing companies that can accelerate the project payback. On the other hand, host governments should be careful in utilizing this mechanism to attract investors

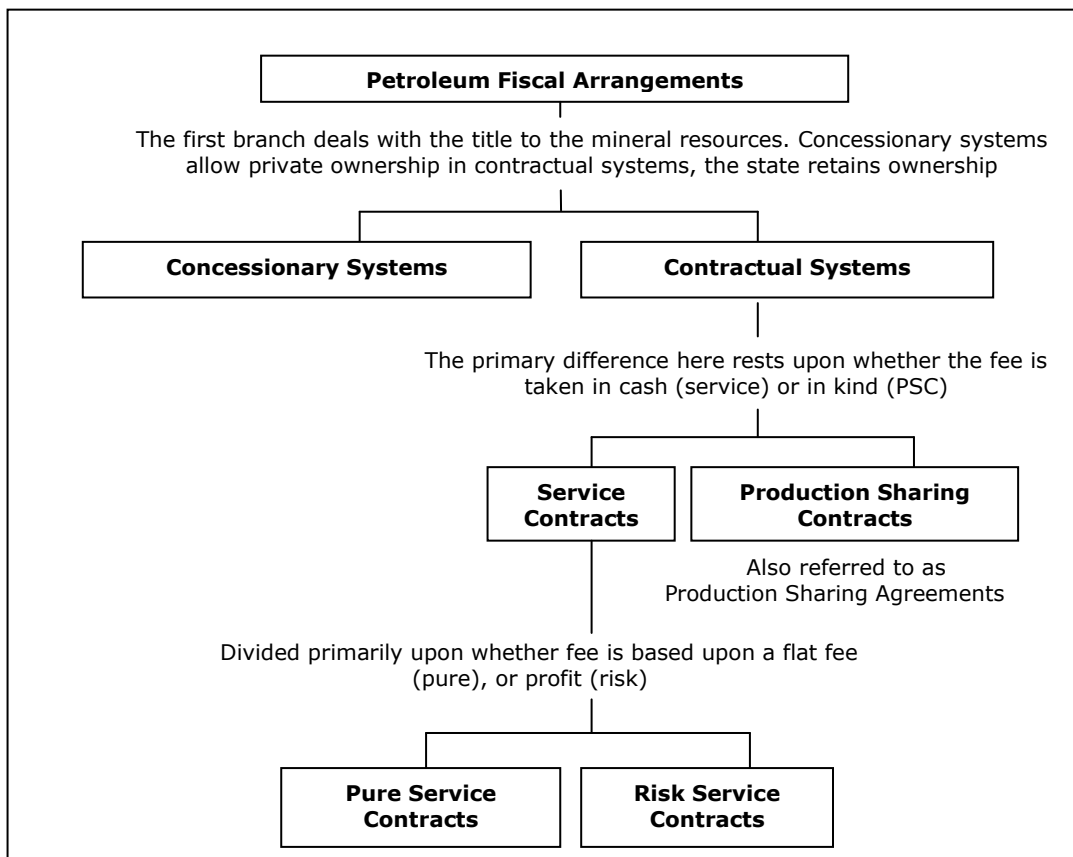
Source: Tordo, 2007

2.5 Alternative petroleum tax regimes

Governments across producing nations use various types of petroleum fiscal systems. According to Kaiser and Pulsipher (2004), there are more fiscal regimes in the world than there are countries for three basic reasons: i) numerous versions of contracts may be in place at any one time, ii) countries most often use more than one fiscal arrangement, and

iii) contract terms are often negotiated and renegotiated because of changes in political and economic conditions. These numerous fiscal regimes are classified into two broad categories: concessionary systems and contractual systems (see Figure 2.1).

Figure 2.1: Classification of Petroleum Fiscal Systems



Source: Johnston, 1994

2.5.1 Concessionary system

This system is also called royalty/tax system. Under this system, the government decides whether the petroleum resources are privately owned or are owned by the state. The MOCs, under this system, are transferred the right to explore and produce petroleum on the concession areas. In the words of Nakhle (2008:32), a concessionary system is:

“an arrangement between a government and a company that grants the company the exclusive right to explore for, develop, produce, transport and market the petroleum resource at its own risk and expense within a fixed area for a specific amount of time”.

It is, however, worthy to note that the degree of concession varies. In its traditional form, the concession arrangements grant the MOCs the ownership of the petroleum resources in the ground and as such they have exclusive control over all operations under the concession. The state only receives royalties and taxes. Under the modern concessionary system, however, right of ownership of the petroleum resources is only transferred to the MOCs at the wellhead. At this point, Johnston (2007) noted, the MOCs take the title to gross production less royalty oil, unless the government agreed to be paid royalty in cash. In effect, the right of ownership of the petroleum resources in the ground remains with the state. Accordingly, the state, through participation, has a more direct involvement and control of operations (Le Leuch, 1988). The state, in addition to royalties and income taxes, also receives bonus payments, import and export duties, and domestic supply obligations.

Concessionary systems are subject to review because governments sometimes change their petroleum tax laws and levels. In some cases, concessionary systems are renegotiated. Although countries have different types of royalty sliding scaling systems and levels of taxation (see Johnston, 1994), most concessionary systems are very easy to understand. A royalty/tax system, according to Kaiser and Pulsipher (2004), has in its basic forms three components: i) royalty, as discussed earlier, represents a cost of doing business and is tax-deductable, ii)

deduction, which include operating cost and capital allowance and iii) tax, on the income of the MOCs.

There are a number of reasons why countries are applying a concessionary system to petroleum activity¹⁶. First, it is relatively risk free. The MOCs provide the finance as well as the technical expertise and equipment and bear all the risks associated with them (Le Lench, 1988). Second, the concessionary regime gives room for the government to participate, through national oil companies (NOCs), in upstream operations. This, according to Klueh et al (2007), will enable the NOCs and their staff to acquire the necessary skills and expertise to be able to take over operations in the future. Third, the royalty/tax system allows for ring fencing of individual projects in order to limit the extent to which MOCs can offset the costs of one project against the other. Ring fencing, Nakhle (2008) noted, safeguards new entrants from discrimination by reason of the fact they have no income against which to deduct expenses incurred from E&P activities.

While the above advantages are enough to encourage the application of the royalty/tax regime, there are certainly some drawbacks of the regime. First, bidding rounds for licensing under a concessionary regime tend to be expensive both in terms of money and time¹⁷. Unless the system is designed in such a way that it can attract financially and technically strong bidders, bidding processes may not be profitable. Second, MOCs tend to be conservative in bidding for concession areas,

¹⁶ According to Johnson (2001), there are 55 countries that apply the concessionary system in petroleum activity.

¹⁷ Under a concessionary system the government or land owner will transfer title of the minerals to the oil company which is then subject to the payment of royalties and taxes.

particularly those areas that not previously explored. Accordingly, if the government is targeting for substantial up-front bidding fees, it stands to be at disadvantage (Radon, 2007).

2.5.2 Contractual system

This regime is based on the French legal concept of state ownership of mineral resources for the benefit of all citizens (Johnston, 1994). The MOCs are given a right for a share of the resource produced in agreement with a production sharing contract (PSC) or service contract (SC). If the MOCs receive a share of oil produced after the government share is deducted, the system is called PSC (also known as production sharing agreement (PSA)), and the MOCs effectively take title to their share of output. On the other hand, if the MOCs are paid fees for successful E&P operations, the system is called an SC (also known as risk-service contract (RSC)). The terms of the contracts are basically determined through legislation but many aspects of them may be negotiated (Kaiser and Pulsipher, 2004). Contractual systems, just like the concessional systems, are frequently renegotiated as political and economic conditions change.

Under contractual systems, the MOCs bears all the costs and risks of exploration and development with no right for repayment should there be no discovery. Where, however, discovery is made, the MOCs are allowed to recover the costs they incur and this is called cost recovery or cost oil. Cost oil includes previously unrecovered costs, operating and capital expenditures, and investment incentives.

As the reward of the MOCs under a SC is in cash, the MOCs, according to Nakhle (2008), prefer a PSC¹⁸ than the SC. There are a number of reasons for such preference. First, the fact that the state is the owner of the petroleum resources demonstrates the state's claim to sovereignty over its petroleum resources. The MOCs are only entitled to ownership of their share of production at the point of export or other predetermined points. Second, all equipment bought and used by the MOCs in their E&P operations within the country becomes the property of the host country. Title of such equipment, according to Johnston (1994), may pass to the host country either immediately on arrival in the country or upon commissioning or start of operation. Third, all risks associated with E&P activities are avoided by the host country. The MOCs, as noted earlier, bear all the risks and expenses and are only allowed to reclaim their costs if operations are successful. Fourth, government take is not only improved but also comes earlier (Nakhle, 2008). In addition to royalties and income taxes, the government earns under the concessionary system other revenue elements under the PSC which include state participation, bonuses, and domestic supply obligations. Fifth, the system is flexible making it possible for each PSC to be adaptable to different geographical and geological situations in the country which is necessary in making up the differences in fields or areas that cause development costs of some fields or areas to be higher than others (Baunsguard, 2001).

The contractual system may be favoured for the reasons above, but certainly has some shortfalls that are worthy of consideration. First, the

¹⁸ Henceforth PSC is used synonymously with contractual system.

automatic transfer of title of equipment and other facilities purchased by the MOCs to the host government legally transfers the decommissioning liability of such equipment to the state. Unless the government ensures in the contract that the obligation for decommission is that of the MOCs, the burden cannot be avoided (Tordo, 2007). Second, the PSC system which in most cases is designed as a self-contained law (Sunley et al, 2002) lacks regulatory checks and balances (Radon, 2007). The government, Radon (2007) further noted, is thus left with enforcing such things as environmental practices of the MOCs, which in effect reduces its share of take.

2.5.3 Choice between concessionary and PSC regimes

There is no hard and fast rule for the choice between a concessionary system and a PSC system (Sunley et al, 2002). The choice of a regime by any producing nation is, thus, a matter of discretion since the fiscal terms of the concessionary regime is replicated in a PSC regime and vice-versa (see Table 2.8).

Table 2.8: A comparison of royalty/tax and PSC regimes

Risk/Reward Trade-off	Tax/Royalty Regime	Production Sharing
Low risk to government	Royalty	There may be an explicit royalty; or there may be a limit on cost oil that functions as an implicit royalty
Medium risk	Income tax	Income tax, which may be paid out of the government's share of production
High risk	Resource Rent Tax	The determination of the amount of profit oil can mimic a resource rent tax

Source: Sunley et al., 2002

From Table 2.8, it can be seen that the PSC regime employs an explicit royalty and also subjects the MOCs to income taxes as any other

company. These are both applicable components under the concessionary regime. Similarly, the split of profit oil under the PSC regime can be said to be an imitation of the resource rent tax (RRT) under the concessionary regime.

While the adoption of a fiscal regime type is a matter of discretion as discussed above, primarily countries should design tax systems that best suit their needs in accordance with prevailing global circumstances that allow the efficient capture of economic rent. At the exploratory stage, for example, the adoption of a PSC is more beneficial, particularly where there is scarcity of fund, as governments are not required to fund exploration activities. On the contrary, where reserves are proven, governments may partake in JV agreements in order to secure state ownership of part of the petroleum reserves.

A summary of the main features of the alternative petroleum fiscal regimes is presented in Table 2.9

Table 2.9: Summary of main features of fiscal regimes

	R/T Systems	PSC	Service agreements
Types of projects	All types	All types	All types but often non-exploration
Ownership of facilities	Contractor group	Government NOC	Government NOC
Facility title transfer	No transfer	When landed or when commissioned	When landed or when commissioned
Group ownership of hydrocarbons	Gross production less royalty	Cost oil + profit oil	None
Hydrocarbon title transfer	At the wellhead	Delivery point or fiscalisation point	None
IOC lifting entitlement	Typically about 90%	Usually from 50-60%	None (by definition)
Government participation	Yes, not common	Yes, common	Yes, very common
Government control	Very little	More control	Most control

Source: Johnston, 2008

2.6 Implementation of petroleum tax systems

The worth of a country's tax regime, petroleum or otherwise, depends on how effectively it can be implemented. A well designed tax regime that cannot be implemented is worth little (Bird and Zolt, 2003). The administrative aspects of taxation, therefore, need to be captured properly while designing a tax system. A poorly administered resource tax system, according to Calder (2010a), has the significant risk of not only causing serious damage to government revenues and reputation but also the likelihood of leading to bad tax policy choices.

In this section, three different areas as they relate to the administration of petroleum tax system will be reviewed: tax policy, functions, and institutions.

2.6.1 Tax policy

Petroleum tax policy is an important aspect of petroleum tax administration. Within the context of petroleum taxation, it refers to the design of rules that govern petroleum taxes (Calder, 2010b). Tax policy, Calder and McPherson (2008) further noted, determines the nature, extent, and difficulty of the administrative challenges of the various petroleum tax instruments discussed in 2.4.3 above. Below is a review of the administrative challenges posed by some of the tax instruments.

1. Bonuses: bonuses, as stated earlier, are one-off payments when E&P license agreements are signed and, thus, require no ongoing administration. Although contract awards that produce the best feasible negotiated terms and avoid the risks of collusion and corruption need the

design of good administrative procedures, Calder and McPherson (2008) are of the view that these procedures, no matter how well they are designed, are generally not thought of as administrative issues. Since bonuses are paid up-front they may not be responsive to future changes in profitability of projects. Thus, bonuses, if paid in large amounts, may lead to renegotiation of contracts which, in turn, may indirectly create administrative complications (Calder, 2010b).

2. Royalties: each class of royalty poses some administrative challenge. For volume based royalty, establishing the volume of production, for example, involves a tedious process of installing, maintaining, and testing of meters to enable measuring, analysing, and monitoring of production quantities in order to ensure that all room for illegal extraction is blocked. In the case of value based royalty, the challenges are those of establishing price because of variations in quality and different bases of pricing.

3. Income taxes: the administrative challenges relating to income taxes, according to Calder (2010b), concern difficulties of valuing other revenues, such as ancillary income and gains on disposal, and difficulties associated with establishing costs, such as cost recovery limit and treatment of cost offsets, to be included in the computation of tax liabilities.

4. Participation: using participation as a tax instrument poses some administrative challenge. The need, for example, for a reliable and transparent accounting system as well as a good commercial and business footing are good examples of the challenges of equity

participation. Where participation involves service or buy-back contracts, Calder and McPherson (2008) argue that oversight of such contracts is likely to pose challenges relating to monitoring and controlling costs similar to those faced under profit taxes.

From the review above, it can be seen that some of the instruments pose greater challenge than the others. Ignoring these challenges, Calder (2010b) argued, would mean that the petroleum tax policy should be determined almost entirely by the government's broader policy objective of capturing a fair share of the petroleum resources for the host government while at the same time encouraging investors to ensure optimal recovery of those hydrocarbon resources. The problem, however, with these objectives is that they often compete rather than complement each other (Nakhle, 2008). To manage this problem, governments attempt to strike a balance between policy objectives and administrative challenges by simplifying administration within the overall tax framework (Calder, 2010b). Some of the ways of achieving simplification include the following:

1. Benchmarking of prices of output. This may seem crude but Calder (2010b) argues that it is simpler and more transparent than setting pricing on the basis of actual sales.
2. Reduction of the differences in the treatment of different cost categories. For example, standardising depreciation rates for exploration, development, and production costs may make the computation of depreciation less complicated.

3. Allowing the deduction of interest on the basis of standard rules. A good example of doing this is to limit eligible debt to a certain percentage of development costs less income from production activities.

4. Placing of reasonable limits on deductible costs incurred for the payment of goods and services from associate companies. This might seem crude relative to full deduction but again is much simpler and more transparent.

While the above examples may be appropriate for most countries, care should, however, be taken to ensure that administrative simplification is not taken too far. The methods of capping costs, for example, can be arbitrary and unrealistic. This may distort decisions and, perhaps, exert pressure for contract renegotiation.

Notwithstanding the measures above, striking a balance between tax policy objectives and administrative simplicity is still not an easy task. Many countries, Calder (2010b) noted, have different resource taxes that are administratively simple and straightforward, but at the same time have complex petroleum taxation regime because of the number of taxes, on one hand, and the number of sub-regimes that apply to different license areas.

2.6.2 Tax functions

Tax administrative functions, according to Calder (2010a), are broadly classified into routine and non-routine functions. Routine functions relate to the mechanics of collecting tax while non-routine functions concern the correct quantification of tax.

2.6.2.1 Routine tax functions

These functions, Calder (2010a) noted, involve four different but interrelated activities: i) registration of taxpayers, ii) processing of tax returns, iii) making of tax assessments, and iv) collection of tax. Where the taxpayers population is large, routine functions can result in taxpayers either failing to make themselves known to the tax authorities and/or refusing to file their tax returns or even failing to pay tax when due (Calder and McPherson, 2008). However, since oil production in most producing countries is carried out by few MOCs, identifying these companies presents no administrative problems and in most cases the MOCs generally comply with routine obligations of submitting tax returns and paying taxes when due particularly if the tax system is backed with a strong penalty for default (McPherson, 2008). Accordingly, routine administration of petroleum taxes is arguably simpler than routine administration of other taxes.

2.6.2.2 Non-routine tax functions

There are a number of non-routine functions that relate to petroleum tax administration which include; valuation of petroleum resources, tax audit, and dispute resolution. These functions are directly related to petroleum tax administration (Carder and McPherson, 2008).

First, the valuation of crude oil produced is needed for both production and profits taxes and is derived by multiplying volume and price. The administrative challenge involved is that of establishing production volume and crude oil price. Establishment of production volume are technical and require sophisticated equipment. Various approaches are

adopted but traditionally output is established at year ends. In order to be effective, however, the procedures, as noted by Calder (2010a), should be carried out on a continuous basis rather than at the year end.

Appropriate pricing of crude oil produced is fundamental for producing nations. Accordingly, tax authorities, in many countries, determine in advance what prices MOCs must use for valuing oil production for tax purposes (Calder, 2010a). This pricing approach, Calder (2010a) further emphasises, is adopted because of the prevalence of transfer pricing risks and other risks in the petroleum industry.

Second, no matter how well a petroleum tax system is designed, there is always some scope for error which may give rise for different interpretation and unacceptable manipulation of tax laws (Carder and McPherson, 2008). There is, therefore, the need for an effective tax audit to ensure that risk of revenue loss to the government is reduced.

Tax audit can be carried out by making a full coverage of all the MOCs with comprehensive field audits in every case. This approach is often combined with a formal approach giving advance notice of the audit exercise (Calder, 2010a). Another approach is to combine full field audits of some selected companies with limited desk audits of other companies. Another approach is to undertake a mixture of desk audit and selective examination. Notwithstanding the approach a country adopts, the success of its tax audit depends largely on the skill and capacity of the auditor (Calder, 2010a).

Tax audit, Calder (2010a) noted, is challenged for being aggressive and unfair with little protection for the MOCs from unreasonable audit

demands, tax adjustments, and penalties. In order to address this problem, producing nations, Calder (2010a) further noted, often make it a good practice by explaining, in published guidance or codes, how audit powers will be exercised and what safeguards are available to the taxpayers.

Third, resolution of disputes can either be by agreement or through formal litigation. Dispute resolution in the course of an audit by agreement is preferred because resolving disputes by formal litigation is resource extensive and is typically very slow (Calder, 2010a). Disputes can be resolved successfully if the tax law is reasonably clear and there are adequately trained negotiators who are well versed in the law of taxation. Where disputes cannot be resolved by agreement, the MOCs should have formal rights of appeal.

Many countries maintain tax tribunals that decide matters of fact and law arising from unresolved disputes (Calder and McPherson, 2008). Although appeals are made to the court, most often such appeals are on matters of law (Calder, 2010a). Because of the lengthy and cumbersome procedures involved in matters of fact if to be decided by the court, such matters are most often resolved by the tribunals.

2.6.3 Tax institutions

The allocation of administrative responsibility for petroleum taxation varies from country to country. Some countries assigned the responsibility to the state tax department alone, while in other countries the responsibility is assigned to the sector's ministry and some selected institutions. In a typical tax/royalty system, for example, the

responsibility for profits taxes is assigned to the state tax department while that royalty is assigned to the sector's ministry. Similarly, in a PSC income tax is the responsibility of the state tax department, while matters relating to government share of profit oil are the responsibility of the national oil company (NOC).

Placing responsibility for petroleum tax administration in the hands of different agencies has the main advantage of reducing the risk of serious error and collusion as no single office controls the entire administrative procedures (Calder, 2010a). It is, however, open to the accusation of being a duplication of work, too complex, lacks clarity about responsibilities and that there may be too many regulators for companies to deal with (Calder, 2010a).

The above disadvantages can be minimised by improving cooperation among the agencies, which Calder (2010a) says is often ignored in practice. Various ways of improving cooperation among petroleum tax administrative agencies have been suggested in the literature (see Calder and McPherson, 2008; Calder, 2010a). One such approach is to clarify the responsibilities of the agencies. This opens up the scope for the removal of duplication of functions and consolidation of procedures. Similarly, regular interchange and secondment of personnel among the agencies may also improve cooperation. Furthermore, a joint committee of the top management of the agencies is also likely to improve the cooperation among the agencies.

Whichever administrative approach a country adopts, the important thing is to have an effective administrative system which, according to Calder and McPherson (2008:40), requires:

“Good, qualified, motivated staff, adequately paid, well trained, properly managed, supplied with adequate accommodation and resources, particularly IT, and given an adequate delegated budget and authority to do their job”.

The recruitment process of staff for petroleum tax administration is often poor and discriminatory in nature (Calder, 2010a). Similarly, petroleum tax offices, Calder (2010a) further noted, often have no control over appointment of staff but instead depend on bureaucratic and rather unresponsive personnel of civil service departments. Thus, for effective administration, recruitment practices should be reviewed and strengthened to give more autonomy to the tax offices, but in a way that is commensurate with the small number of staff required.

It is equally important for producing nations to have a petroleum tax manual detailing guidance on petroleum tax laws and procedures which can be used as a means for communicating governments’ efforts in applying petroleum law and practice in the industry.

Another aspect of petroleum taxation that is often ignored is the management of the performance of petroleum tax administrators. The importance of effective managing of the performance of petroleum tax administrators is emphasized by Calder (2010a:363) as thus:

“Something else often lacking is any effective management of staff performance. There is no setting of targets or objectives, no monitoring of performance, no annual reporting, and no mechanisms for rewarding good achievement or getting rid of poor performers”.

Addressing this problem, Calder and McPherson (2010a) affirmed, requires not only governments’ financial commitment but also a fundamental overhaul of attitude towards performance management. Given the small number of petroleum tax administrators, this overhaul may be achieved.

Further requirement for effective administration of petroleum taxation is the availability of, and access to information technology. Information technology can be employed in the petroleum sector to control and perform routine functions, establish audit trails, and also account for the assessment and collection of taxes (Calder, 2010a). All these have the potential of simplifying tax administration, improving openness, and reducing corruption.

Financing of petroleum tax administration is yet another aspect that receives less attention from host governments (Calder, 2010a). Funds for administration could come from the budget as well as from loans, and grants. The problem, however, is that even where funding is enough, spending is often blocked by bureaucratic budgetary procedures (Calder, 2010a).

2.7 Conclusion

The above analysis of the theoretical background relating to the design and implementation of petroleum taxation is used to inform the structure

of the research that is required to achieve the objectives of this study. Its accomplishment in this chapter sets out the basis for the analysis of the Nigerian petroleum tax regime.

The chapter reviewed the functions and principles that underpin the effectiveness of all tax systems. Similarly, an analysis of the argument for the establishment of a separate petroleum tax system as well as the functions and characteristics of petroleum taxation was extensively carried out. A review was also made of the processes involved in the design of petroleum taxation including the definition of objectives and the instruments used in achieving set objectives.

The analyses revealed a number of issues. It is evident that there is no single tax system that is applicable to all nations. This is particularly the case with petroleum taxation which, according to Miller (2000), is a complex issue both in terms of economic theory and political economy. Each country designs its petroleum tax system on the basis of its circumstances and needs.

The review also identified that alignment of the investor's interest with that of the host government is at the heart of an effective petroleum tax system. This is a sensitive aspect of petroleum taxation as it requires compromises from both the host government and the investor.

It was also found that there is no particular reason informing host governments' decisions on the choice of a particular petroleum fiscal regime. The choice of a regime is a matter of discretion since the fiscal terms of concessionary regimes are replicated in a PSC regime and vice-versa.

The review also revealed the link between tax administration and policy choices. A poorly administered tax has the risk of not only causing serious damage to government revenues and reputation but also has the potential of leading to bad policy choices.

The next chapter reviews the literature relevant to the Nigerian petroleum tax system. Specifically, the review will focus on the tax objectives and instruments used in the design of the Nigerian petroleum tax system. Similarly, the review will also focus on the nation's petroleum fiscal regime as well the procedures in place for administering such a regime

Chapter Three

A Review of the Nigerian Petroleum Tax System

3.1 Introduction

In line with the general review of petroleum taxation system in the previous chapter, this chapter reviews the specific petroleum taxation that is operating in Nigeria. In order to achieve this objective, the chapter is divided into seven sections. Section 3.2 examines the development of the Nigerian petroleum policy addressing the various changes in oil policy that occurred over the years. This is followed by section 3.3 which deals with the Nigerian petroleum tax objectives and instruments. The laws governing the Nigerian petroleum tax system are reviewed in section 3.4, while section 3.5 discusses the petroleum fiscal regimes employed in the Nigerian oil sector. Section 3.6 reviews the administration of the Nigerian petroleum tax system under two headings: administrative functions and administrative agencies. Section 3.7 concludes the chapter.

3.2 Development of Nigerian Petroleum Policy

Until 1966, Nigerian oil policy had only been the collection of taxes, rents, and royalties (Nwokeji, 2007). From 1966 onward, Nigeria had witnessed various changes in its oil policy. One of these changes was the enactment of Decree No. 65 of 1966 which amended the government's financial agreements with the oil companies. This Decree, among other things, addressed issues relating to the rates of capital allowance allowed on qualifying capital expenditures.

In 1967, the fiscal provisions of the Nigerian Petroleum Act were amended by the enactment of Decree No. 1 of 1967 to provide for the establishment of posted prices which attracted royalties and tax payments and allowed for the expensing of royalties. These new provisions led to a significant increase in oil revenues for the government from N30 million in 1967 to N6.081 billion in 1977 (Udosen et al., 2009).

Also at the heart of Decree No. 1 of 1967 were the indigenisation and partial nationalisation of the interests of the MOCs. This shift in policy could be attributed to at least three reasons. The first reason could be the government desire to address the longstanding public demand to end foreign dominance of the economy (Pearson, 1970). Second, the adoption of OPEC's Declaration of Petroleum Policy¹⁹ by member States also contributed to the policy shift. OPEC's decision to take over full control of the production and sale of oil in member states had, according to Nafziger (1973), directly impacted on Nigeria even though Nigeria was only attending OPEC's meetings as an observer prior to it joining the cartel in 1971. Third, the increase in oil revenues post-1966 was also another reason that convinced the government of the possible benefits of indigenisation and nationalisation of the oil sector (Jacoby, 1974).

In 1969 the government took a further step by promulgating a Decree called Petroleum Decree No. 51 which, among other things: transferred the ownership and control of all oil resources in the country to the state, compelled the MOCs to employ Nigerians, established the government's

¹⁹ OPEC's declaration of petroleum policy refers to the intrinsic right of all countries to exercise permanent sovereignty over their natural resources for the purposes of national development as expressed by the United Nations (Rahman, 2004).

option of acquiring a stake in the MOCs, and specified that only companies registered in Nigeria could be granted oil licences.

To actualise its indigenisation and nationalisation policy as contained in Decree No. 1 of 1967 and the Petroleum Decree of 1969, the government established the Nigerian National Oil Corporation (NNOC)²⁰ in 1971 and acquired 35% stake in Elf that same year. By 1979, government share in the MOC's interests in Nigeria in the form of JVs had reached an average of 60% (Nwokeji, 2007).

The late 1970s witnessed a dramatic switch in Nigeria's oil policy. The government, compelled by MOCs suspension of exploration activities, dropped its hard-line policy approach and re-acknowledged its dependency on the MOCs (Ojo, 1984). Several financial incentives, Ojo (1984) further noted, were provided to the MOCs in order to entice them to resume exploration activities. There was, for example, the reduction of the petroleum profit tax (PPT) from 85% to 65.75% on companies engaged in exploration but not producing and the cancellation of the requirement for the MOCs to meet, on a pro-rata basis, 30% of the country's domestic crude oil needs (Omorogbe, 1987).

Hit by the oil glut of the 1980s, Nigeria, in order to encourage further active participation of the MOCs in the oil sub-sector, signed a Memorandum of Understanding (MOU) with the MOCs in 1986 which provides, among other things; replacement of the posted price with

²⁰ The NNOC was established by the NNOC Act No. 18 of 1971. It is vested with the powers to acquire assets and liabilities, on behalf of the government, in existing MOCs and also to participate in all activities of the oil industry. The NNOC is succeeded by the Nigerian National Petroleum Corporation (NNPC) which was established by the NNPC Act No. 33 of 1977, as amended

realisable market price of crude oil, a guaranteed minimum margin of \$2.00 for realisable prices below \$12.50/bbl, and a reserve addition bonus on successful discoveries. All these effectively reduced the amount of tax paid by the MOCs (Khan, 1994).

The average 60% stake of the government in the MOCs has achieved the country's indigenisation and nationalisation policy but equally left the government with the burden of funding 60% of the financial commitment of its JV with the MOCs which the government found difficult to meet (Ameh, 2005). Accordingly, government policy started to shift from JV contracts to PSCs by offering, among other things; attractive royalty rates, relative to the rates applicable to the JVs, with the primary aim of encouraging deep sea exploration (Ameh, 2005).

In addition to the shift towards PSCs, the government also took a new indigenisation approach in the 1990s. This time, instead of increasing government participation, the government advocated for increased Nigerian participation in the oil sector. In 1990, the Nigerian government promulgated a law that empowers it to recover legally the then 183 marginal oil fields abandoned by the MOCs for lack of commerciality and allocated them to several indigenous oil and gas companies (Agoro, 2000).

3.3 Nigerian Petroleum Tax System

Generally, a tax system comprises of three basic components: tax policy objectives, tax laws, and tax administration (Somorin, 2010). This part of

the study critically reviews the tax policy objectives and instruments of the Nigerian petroleum tax system.

3.3.1 Tax policy Objectives

Nigeria, just like any other oil producing state, has the main upstream fiscal objective of ensuring the generation of maximum revenue to the government from petroleum activities while at the same time guaranteeing the investors a reasonable return on investment (National Policy on Oil and Gas, 2004). With this broad objective in mind, the Nigerian petroleum tax regime is designed to achieve other specific objectives.

In terms of share of oil rents, the tax regime is designed to capture a fair share to the government. Generally, Nigeria's shares of rents from petroleum projects are fixed in the range of 80-85 percent (ESMAP, 2004). These shares of oil rents account for about 78% of Nigeria's total revenue which are similar to the levels of revenue that are obtained in other major oil producing countries (see Table 2.2). The pursuance of this objective has rendered Nigeria as an oil dependent nation (see Table 2.2 and 3.2). This might not be good for the country in the long run as the world is now moving toward renewable energy.

Similarly, in order to contain the cost of the MOCs, various incentives are given in the tax system (see Section 3.4.2). These incentives are aimed to encourage and motivate the MOCs in minimising wastages so that profit available for sharing between them and the government is improved (ESMAP, 2004). While it is important that Nigeria improves on the incentives it gives the MOCs, it seems worth noting that the

effectiveness of tax incentives as determinant for attracting FDI is not conclusive. Some researchers hold the view that tax incentives increases FDI (see Allen and Wells, 2001), while others disagree (see Morisset and Pirnia, 2001).

Another important objective which the tax system seeks to achieve is effectiveness in sharing of the oil revenue among the three tiers of the government. Since petroleum resources in most states or federations are concentrated within one or two regions, an appropriate tax regime should provide an acceptable and stable revenue sharing formula for the nation. In the case of Nigeria, the constitution has clearly stated the formula for the distribution of petroleum and other revenues accruing to the government (see Table 3.1). However, one thing that is not clear is whether such sharing formula is considered fair by all the three tiers of the Nigerian government.

Table 3.1: Nigeria’s Revenue distribution formula

Recipient	% share
Federal Government	48.5
State Governments	24.0
Local Governments	20.0
Special Funds	7.5

Source: Nigerian Constitution, 1999

Accuracy in the timing and stability of revenue from crude oil is an objective that Nigeria, just like most oil producing nations, aims to achieve. Stability of revenue from petroleum is very important to Nigeria. As earlier discussed, Nigeria depends heavily on oil revenue. For example, more than 60% of Nigeria’s projected government revenue for the years 2012 to 2015 will come from oil (see Table 3.2). Delay and

fluctuations in these projections will certainly not be favoured by the government. However, the achievement of these projections depends on developments in the international oil markets over which Nigeria has no control.

Table 3.2: Nigeria’s Fiscal Framework 2012-2015 (extract)

Fiscal Item	2012 Projection (Billion)	2013 projection (Billion)	2014 projection (Billion)	2015 projection (Billion)
Gross Revenue	N9,406.06	N10,097.19	N10,949.97	N11,566.50
Oil Revenue	N6,403.40	N6,506.34	N6,638.33	N6,922.10
Non-oil Revenue	N2,741.15	N3,300.31	N3,998.48	N4,329.15

Source: Budget Office of the Federation of Nigeria, 2012

3.3.2 Tax instruments

As in other jurisdictions, Nigeria employs a mix of tax and non-tax instruments to achieve the objectives above. These instruments are broadly classified by Omorogbe (2005) as pre-production and post-production payments. Pre-production payments allow the government to raise some revenue prior to the discovery of any oil. The amount that can be earned from these payments depends on the deposits that the MOCs are expected to find (Omorogbe, 2005). Where the expected find is not substantial and the amounts for these payments are fixed high, it can serve as a disincentive for investment. Post-production payments, on the other hand, are payments after commercial production. These payments are basically geared toward capturing as much economic rent as possible to the state without hindering continued exploration and development activities.

Most of the pre-production payment instruments fall under a quasi-tax category (e.g. fees, bonuses) but in the case of post-production payments some instruments fall under direct taxes (e.g. income taxes), others under indirect tax (e.g. royalties, Value added tax), and still some others under quasi-tax (e.g. production bonuses, participation interests).

Fees

Various fees are paid by the MOCs operating in Nigeria to the government. These fees include payments in relation to applications, grants, and assignment in respect of: oil exploration licences; oil prospecting licences; and oil mining licences.

An oil exploration licence is a licence granted by the Minister of Petroleum Resources authorising the licensee to assume exploration activities in the area covered by the licence but excluding land for which the grant of oil prospecting licence or mining lease for which licence is either granted or currently in force (Petroleum Act, Schedule 1(1), 1990). An exploration licence neither confers the holder any exclusive right over the licence area nor precludes grant of another licence. It expires at the end of every year (Petroleum Act, Schedule 1(2), 1990).

Oil prospecting licences grant the holder the exclusive right to explore and prospect for crude oil under the area covered by the licence (Petroleum Act Schedule 1(5), 1990). The holder may, in accordance with Schedule 1(7) of the Petroleum Act, carry and dispose any petroleum won during the course of prospecting activities in compliance with the provisions of the Act. A prospecting licence in Nigeria usually does not exceed five years.

Oil mining leases is only granted to the holder of oil prospecting licence if the holder satisfied all the conditions imposed on the licence and has discovered oil in commercial quantity (Petroleum Act, Schedule 1(8), 1990). The holder has the exclusive right to “conduct exploration and prospecting operation and to win, get, work, store, carry away, transport export or otherwise treat petroleum discovered in or under the leased area” (Petroleum Act Schedule 1(11), 1990). The term of the lease should not be more than twenty years.

Bonuses

Bonuses are the main source of pre-production payments (Omorogbe, 2005) and are a typical characteristic of production sharing contracts and service contracts. There are two types of bonuses included in Nigeria’s PSC agreement: signature bonus and bid bonus. Because of the importance of risk perception in Nigeria, bid bonuses have been, relatively, kept modest (ESMAP, 2004). A summary of bonuses applicable to onshore and offshore fields in Nigeria is presented in Table 3.3.

Table 3.3: Bonuses payable in Nigeria’s upstream sector

Bonus type	On-shore	Off-shore (<200m water depth)
Signature	\$1 million	\$1million
Production: 10Mbd	\$1million	\$2million
50Mbd	\$2million	\$4million

Source: ESPAP, 2004

Rent

MOCs operating in Nigeria are liable for a rent payable for each calendar year for which an oil exploration licence is in force (Petroleum (D&P)

Regulation, paragraph 60(1)). Where the exploration licence is in force for less than a calendar year, that part shall be regarded as a calendar year. Paragraph 60 (2) of the Regulation specified the amount payable on oil prospecting licence and oil mining lease as follows:

1. \$10 per square mile or part thereof on an oil prospecting licence
2. \$20 per square kilometre or part thereof on a producing mining lease for the first ten years
3. \$15 per square kilometre or part thereof after the expiration of the first 15 years of a producing mining lease and on renewal

One good practice which Nigeria has not adopted is the distinction between licence for landward and seaward areas. This distinction, if adopted, will enable the government to set appropriate rents for landward and seaward licence regimes, which will arguably be of interest to the MOCs, instead of charging the unified rents above.

Royalties

Nigeria operates a sliding scale royalty system for its joint venture and production sharing contracts (see Tables 3.4 & 3.5).

Table 3.4: Royalty Rates Applicable to JV Contracts in Nigeria

Water Depth (Meters)	Royalty Rates (%)
Onshore	20
Offshore	
Up to 100	18.50
101-200	16.50
201-500	12.50
501-800	8.00
801-1000	4.00
Over 1000	0.00

Source: ESMAP, 2004

Table 3.5: Royalty Rates Applicable to PSCs in Nigeria

Water Depth (Meters)	Royalty Rates (%)
Onshore	10
Offshore	
0-100	10
200-500	12
500-800	8
800-1000	4
>1000	0

Source: ESMAP, 2004

Royalties are paid within 60 days of the date when payment was made last. The MOCs are, thus, permitted to pay the amount due for royalty not more one month after the due date. Where, however, there is a dispute as to the amount of royalty due for a particular quarter, Paragraph 61(2) of the Petroleum (D&P) Regulation stipulates the following:

1. The licensee shall pay the amount it admits to be due within the time provided
2. Any further amount agreed upon or found to be due on settlement of the dispute shall be paid within seven days of the settlement

Income tax

MOCs operating in Nigeria are liable to pay petroleum profits tax (PPT). Such liability to pay PPT explicitly exempts them from the liability to pay corporate income tax, which is applicable to companies in other sectors of the economy. Nigeria's PPT is applicable to all the JVs and PSCs in force in the country at the rate of 85% and 50% respectively.

Education tax²¹

Education tax is assessed together with petroleum profit tax of companies engaged in petroleum operations in Nigeria. It is assessed at a rate of 2% of the assessable profits of a company. Any education tax paid by a company engaged in petroleum operations in Nigeria is allowed to be deducted, under Section 10 of the PPTA, in arriving at the adjusted profits of the company.

Farm-out tax

Any MOC that engaged in farm-outs²² is liable to PPT in Nigeria. This liability is proposed by the PPTA, 1990 in Schedule 2.9 as follows:

"...where in any account period of a company, the company owning any asset in respect of which it has incurred qualifying expenditure wholly and exclusively for the purposes of petroleum operations carried on by it, disposes of that asset, the excess of the value of that asset, at the date of its disposal, over the residue of that expenditure at that date shall... be treated as income of the company of that accounting period.

Capital gain tax

Section 3 of the PPTA defines all forms of property as assets for the purpose of Capital Gain tax Act (CGTA) irrespective of whether the asset is located in Nigeria or in foreign country. The current CGT charged is 10% in respect of any gain accruing to the taxpayer. The FIRS, according to ESMAP (2004), charges CGT when the parent company of a subsidiary

²¹ Education tax is a tax levied on the profits of all companies toward the development educational facilities in Nigeria. It is viewed as a societal obligation on all companies.

²² A farm-out is widely used in the petroleum industry to finance and manage risk in exploration activities. It is "an agreement by one who owns drilling rights to assign all or a portion of those rights to another in return for drilling and testing on the property" (Brown, 1954:25).

in Nigeria is acquired even if there is no direct ownership of the company in Nigeria and also its name is not changed.

3.4 Nigerian petroleum tax law

Nigeria's petroleum tax system is governed by the nations Petroleum Profits Tax Act (PPTA). This law is, however, complemented by a Memorandum of Understanding (MOU) between the government, through the NNPC, and the MOCs.

3.4.1 Petroleum Profit Tax Act (PPTA)

The tax regime for petroleum operations in Nigeria is guided by the PPTA 1990 as amended. The primary objective of the PPTA is to impose a tax regime on the profits of the companies engaged in petroleum operations in Nigeria and also provides for the assessment and collection of such profits. The main provisions of this Act are summarised in the paragraphs that follows.

1. Determination of profits: Profits of a company engaged in E&P activities for any accounting period is defined by Section 9 (1) of the PPTA as the aggregate of: the proceeds of sale of all chargeable oil sold by the company in that period; the value of chargeable oil disposed by the company in that period; and all income of the company of that period incidental to and arising from any one or more of its petroleum operations.

2. Types of profits: Three different types of profits are identified in Section 9 (3), (4), and (5) of the act as: adjusted profit, assessable profit, and chargeable profit.

- Adjusted profit: this shall be profits of an accounting period after all the deduction allowed by Section 10 (1) of the Act and any adjustment in accordance with the provisions of Section 14 of the Act
- Assessable profit: this shall be the adjusted profit of an accounting period after deduction allowed by Section 20 of the Act
- Chargeable profit: this shall be the assessable profit of an accounting period after any deduction allowed by Section 20 of the Act

3. Tax deductions: In computing the adjusted profit of any accounting period, companies engaged in petroleum operations are allowed to deduct outgoings and expenses that are wholly, exclusively, necessarily incurred, within or outside Nigeria, for the purpose of those operations during that period. These expenses, as contained in Section 10 of the Act, include rent incurred under oil prospecting or mining licence, all non-productive rent, royalties in respect of natural gas sold or crude oil won, interest expenses on loan borrowed, interest on intercompany loans, expenses for repairs of premises, plant, machinery, or fixtures employed for the petroleum operation and bad debt directly incurred for the business.

In the case of bad debt, the Act made it clear that deduction is only allowed provided that: i) the deduction made shall not exceed the part of the debt proved to be doubtful in that accounting period, ii) all bad debts recovered are treated as income of the company for that period, and iii) the board is satisfied that the debts for which a deduction is claimed were either included in the profit of the accounting period for which they

were incurred or advances made in the normal course of carrying petroleum business.

While the above deductions are allowable, Section 13 of the Act identified a list of expenses that are not allowed to be deducted by companies engage in upstream petroleum operations. These expenses include expenses or liability not wholly or exclusively expended or incurred for petroleum operations, any capital withdrawn or intended to be withdrawn, any capital withdrawn other than repairs, any sum recoverable under an insurance or contract of indemnity, rent or repair of premises not used for the purpose of operation, any sum incurred as income tax or other similar charged within or outside Nigeria, and depreciation of any building, premises, fixtures or machinery.

4. Assessable tax: The assessable tax for a company, as indicated earlier, is equal to 85% of its chargeable profits of that period (PPTA Section 21 (1), 1990). Where, however, a company has not yet commenced to make a sale or bulk disposal of chargeable oil under a programme of continuous production and sale, its assessable tax for any accounting period shall be 65.75% of the profit of that period.

5. Restrictions on the effect of PITA and other Acts: Section 60 of the PPTA prohibits the payment of tax under the provisions of the PITA or any other Act on any income or dividend paid out of profits which are taken into account in the computation of the amount of any chargeable profits upon which tax is charged, assessed, and paid under the provisions of the PPTA.

6. Double taxation arrangements: Section 61 (1) of the PPTA empowers the Minister of Petroleum to make a double taxation arrangement with the governments of other countries with the view to affording relief from double taxation on tax imposed under the provisions of the PPTA and any other tax with similar characteristics imposed by the law of those countries.

Section 62 (1) of the PPTA stipulates that any foreign tax payable, by a company engaged in petroleum upstream operations in Nigeria, in respect of any income in a country with which Nigeria has double taxation arrangement is to be allowed as a credit in respect income in Nigeria. Such credits, however, should not, in accordance with Section 62 (3) of the Act, exceed whichever is the less of the amount of the: 1) foreign tax payable on the income or ii) difference between tax chargeable under the provisions of the PPTA (before the allowance of credit under Section 61) and the tax chargeable if the income were excluded in computing profits.

3.4.2 Memorandum of Understanding (MOU)

This is a contract between the Nigeria government, through the NNPC, and the MOCs that governs all petroleum JV arrangements in the country. The MOU gives the tax payer two options for the calculation of tax. The first option is based on petroleum profit tax and royalty and the second on the revised government take. The tax payer has the right of choosing whichever option that gives the lower tax liability.

The MOU was first introduced in 1986, and then revised in 1991 and 2000 with the 2000 version being the current version. The objective, as

earlier stated, is to guarantee a certain level of profits to the MOCs in return for continuation of exploration activities. Some of the incentives of the 1986/1991 MOU as summarised by Adepetun (2000) are:

- a. A guaranteed minimum profit margin, under the 1986 MOU, of \$2.00 per barrel after the deduction of tax and royalty. This minimum level was increased to a range of \$2.30 to \$2.50 per barrel equally after tax and royalty.
- b. A reserve addition bonus (RAB) for companies that increase their reserves by a level more than its actual production. This bonus is to be set off against the company's PPT.
- c. Tax reliefs for companies that were able to increase their investments each year beyond a certain level

By granting such incentives, the MOCs are required, in return, to come up with a five year proposal aimed at meeting Nigeria's petroleum tax incentives and also to lift agreed volumes of NNPC's crude oil on receipt of 15 days notice of the latter's inability to lift its share of crude oil (Omorogbe, 2005).

The 1991 MOU was revised in 1996 and became effective on 1st January, 2000. The main intent of the new MOU, according to ESMAP (2004), is to update the core features of the 1991 MOU, strengthen incentives to contain costs, and remove certain provisions which are found to be costly to the government. Some of the incentives of the new MOU include the following:

- a. A minimum guaranteed notional margin to the MOCs of \$2.50 per barrel after tax and equity on their equity share of crude oil. The

NNPC, on the other hand, is given a minimum guaranteed margin of \$1.25 on its crude after tax and royalty.

- b. A minimum guaranteed margin of \$2.70 and \$1.35 per barrel respectively for the MOCs and NNPC once their actual capital investment costs exceed an average of \$2.00 per barrel in any calendar year
- c. A tax inversion rate of 35% was granted to encourage investments and maintain cost efficiency
- d. Any tax, levies or other charges by any of the three tiers of the Nigerian government, apart from PPT and royalty, shall be set off against the MOCs' tax liabilities for that year under the Education Tax Decree (ETD) 1993 as amended. Any amount outstanding after such off set is to be deducted under Section 10 of the PPTA 1990 as amended.

The MOU is a particularly complex contract agreement making it very difficult for many to understand. Notwithstanding the inherent difficulties, the MOU has been effective in achieving the government aim of stimulating upstream petroleum activities (Omorogbe, 2005). Between 1986 when the first MOU was signed and the year 2011 Nigeria's proven oil reserve has increased by 20.5 billion barrels (EIA, 2012).

3.5 Nigeria's petroleum fiscal regimes

The main petroleum fiscal regimes employed in Nigeria are: i) Tax/royalty system which governs all JV agreement) and ii) production sharing contracts (PSC).

3.5.1 The Nigerian Joint Venture (JV)

This is also called Joint Operating Agreement (JOA) and is the basic standard agreement between the government, through the NNPC, and the MOCs (NNPC, 2012). The JV agreement, which accounts for over 95% of crude oil production in Nigeria (ESMAP, 2004), designated one of the partners to be an operator who prepares the program of work and the annual expenditure budget of the JV to be borne by the partners on the basis of their holdings. Each partner has the right to lift and separately dispose of its production share of interest subject to the payment of PPT and royalty (NNPC, 2012). Nigeria's JV model gave each of the partners the right to decide and carry on with sole risk operations. Other provisions of the JOA, according to Umar (2005), are:

- a. Contribution, by partners, of funds to finance the operations of the JV commensurate with their interest in the holdings of the JV
- b. Operator has the freedom to act on behalf of the JV on specific matters and also the right to commit the JV up to a certain authority limit
- c. A close, perhaps fiduciary, relationship exists between the partners with each of them liable only for their respective obligations
- d. Discussion of technical and policy matters is to be made at regular meetings of the operating committee or subcommittee with each partner equally represented

3.5.1.1 The number of JVs in Nigeria

There are six JVs involving the MOCs being operated in Nigeria and in each case the NNPC has the major share holding (see Table 3.6).

The JV contract operated by Shell contributes more than 40% of Nigeria's total oil production from over eighty oil fields (NNPC, 2012). It is operated largely in dry land or mangrove swamp. Next is the JV contract between the NNPC and Chevron. It has been the second largest producer in the past with approximately 400,000 barrels of crude oil per day (NNPC, 2012). Chevron oil fields are located offshore in shallow water. The company is currently targeting a production volume of 600,000 barrel of crude oil per day.

JV number three is with Mobil which is being operated in shallow water off Akwa Ibom state in the Niger Delta region. It had average production of 543,000 and 632,000 barrels per day respectively in 1996 and 1997 (NNPC, 2012). Within the next five years, Mobil is expected, according to industry sources, to overtake Shell as the largest producer of crude oil in Nigeria (NNPC, 2012).

The fourth JV is between NNPC, Agip and Philips petroleum. This venture is producing 150,000 barrel of crude oil per day from small onshore fields. The fifth JV agreement is between the NNPC and Elf. This arrangement produces approximately 125,000 barrels of crude oil per day in both onshore and offshore fields. The sixth JV is operated by Taxaco and owned by NNPC, Taxaco, and Chevron. This JV, according to NNPC (2012), is currently producing about 60,000 barrels of crude oil per day from five offshore fields.

Table 3.6: Major Nigerian Oil Production Joint-Ventures (Extract)

Operators	Other operators	NNPC	Major Producing Fields
Shell (30%)	TotalFinaElf (10%)	55%	Bonny or Eastern Division - Nembe, Cawthorn Channel, Ekulama, Imo River, Kolo Creek, Adibawa and Etelebou Forcados or Western Division - Forcados Yorki, Jones Creek, Olomoro, Otumara, Sapele, Egwa and Odidi
ExxonMobil (40%)	None	60%	Edop, Ubit, Oso, Unam and Asasa
ChevronTexaco (40%)	None	60%	Meren, Okan, Benin River, Delta/Delta South, Inda, Meji and Robertkiri Funiwa, Middleton, North Apoi, Pennington and Sengana
Agip (20%)	Phillips (20%)	60%	Obama, Obiafu, M'Bede, Abgara and Oshi
TotalFinaElf (40%)	None	60%	Obagi, Aghigo, Okpoko, Upomami, Afia and Obodo-Jatumi

Source: EIA, 2003

In recent years, precisely since the year 1996, the NNPC has found itself in arrears vis-a'-vis its JV funding obligations partly because of the difference between the time when approval is given for the corporation's budget and when cash calls are due for payment and partly because of the underfunding of the corporation (ESMAP, 2004). This inability of the NNPC to meet its cash call obligations, ESMAP (2004) further noted, could either delay the prompt implementation of projects, which in turn defers all associated tax revenues and other benefits, or results in a massive build up of interest costs for the NNPC should the partners continue with the projects by financing NNPC's shortfall through bank loans as allowed by the joint operating agreement.

Realising the danger of the continued inability of the NNPC to pay its cash call commitments, the Nigerian government has, over the years, shifted its focus from JV contracts to PSCs as discussed earlier. Similarly, the government may choose to adopt alternative methods of financing its share of the JV contract. One such alternative is project finance. Under this financing option, the bank gives the NNPC the required fund to meet its financing obligations in return for a share of NNPC's future project revenues. Although project finance is a viable option, it is, nevertheless, costly because of high interest rates and the unwillingness of the lending banks to accept any commercial or technical risk. Furthermore, the government could also sell all or part of its equity.

3.5.1.2 The tax/royalty system fiscal provisions

As indicated above, all the JV partners above are governed by the provisions of the tax/royalty system which comprise the following

- 1) Royalty: this is imposed, as earlier stated, under the PPTA 1990 as amended. The government, in 1995, fixed a rate of 20% for onshore fields and rates from 18.5% to 0% for offshore oil fields (see Table 3.5). The royalty payable is currently calculated using a price which the Minister of Finance may establish, from time to time, as its price for Nigerian crude oil.
- 2) Petroleum profit tax: as earlier indicated, the PPT rate for JV contracts is 85% for companies that have recovered their preproduction expenditures. For companies that have not yet recovered their preproduction costs, the Act fixed a rate of 65.75%.

3) Additional taxes: In addition to the PPT, companies engaged in JV contracts are also liable to additional taxes including value added tax (VAT), education tax and import duties, among others.

4) Income tax ring fence: For PPT purposes, the entire exploration and exploration activities of all companies engaged in JV contract is ring fenced. This prevents the companies from transferring losses from upstream operations to downstream operations and also from downstream to upstream.

5) Income tax allowances: In addition to all expenses deductible under Section 10 of the Act, MOCs engaged in JV contracts also enjoy additional allowances. First, MOCs are granted capital allowances for all qualifying capital expenditure incurred (see Table 3.7). Where, however, the assessable profit of a company is insufficient such that the capital allowances for a given period cannot be taken full, then any amount remaining may be carried forward in accordance with Section 15 (5) of the PPTA until fully taken.

Table 3.7: Rate of annual allowance for MOCs in Nigeria

Year	%
1	20
2	20
3	20
4	20
5	19

Source: Nigerian Petroleum Profits Tax Act, 1990

Second, all MOCs engaged in JV contracts are granted an investment tax credit allowance. This is a tax offset on qualifying capital expenditure incurred. The rates allowed differ according to location (Table 3.8).

Table 3.8: Investment tax credit for MOCs in Nigeria

Location	Rate (%)
Onshore oil	5
Offshore oil	
Up to 100m	10
101-200	15
Over 200m	20

Source: Nigerian Petroleum Profits Tax Act, 1990

Third, losses incurred by companies engaged in JV contracts in any accounting period are allowed to be carried forward indefinitely (PPTA, 1990). Losses brought forward from previous accounting periods are added to adjusted profit to arrive at the period's assessable profit.

3.5.2 The Nigerian Production Sharing Contract (PSC)

The Nigerian Deep Offshore and Inland Basic Production Sharing Contract Act (PSCA) 1999 as amended defined a PSC as:

"Any agreement or arrangements made between the Corporation or the Holder and any other petroleum exploration and Production Company or companies for the purpose of exploration and production of oil in the Deep Offshore and Inland Basins"²³

Historically, a PSC was introduced for the first time in Nigeria in 1973 in an agreement between the then Nigerian National Oil Corporation (NNOC) and the Ashland Oil Nigeria Company in respect of Oil Producing License (OPL) No. 98/118 for a period of 20 years and renewable for another 5 years (Umar, 2005). Until 1991, PSCs were seldom used in the Nigerian oil industry. In 1993 the first round of PSC was executed. This was followed by the second round of execution in 2000.

²³ Section 18 of the PSCA defines the term "Holder" as any Nigerian company holding an oil prospecting license or oil mining lease that is located within the Deep Offshore and Inland Basin areas of Nigeria.

A PSC in Nigeria is governed by statutory and contractually negotiated terms between the government, represented by the NNPC, and the MOCs. Some of the areas covered by legislation include government participation, ownership of petroleum resources, commerciality of oil reserves, environmental protection and safety, local content, and taxation issues, among others. On the other hand, contractual areas subject to negotiation include terms and duration of contract, work commitment, rights and obligations of the parties involved in the contract, management functions and powers, and accounting procedures among others.

The main provisions of the Nigeria's model production contract, as outlined by Umar (2005), include the following:

- a. All rights to the contract areas are held by the NNPC,
- b. The NNPC is responsible for appointing the MOCs as contractors under the arrangement giving them exclusive right to petroleum activities in the areas covered by the contracts.
- c. The MOCs are permitted by the contract to operate for a period of 30 years representing 10 years for exploration and 20 years for oil mining.
- d. The MOCs are mandated by the contract to make available sufficient funds for operations and also to guarantee and bear the risks of operating costs.
- e. The contractors are also required to provide employment to Nigerians. In addition they are required to train Nigerians and

encourage the government drive for the actualisation of local content with a view towards achieving technological transfer.

- f. No restriction is imposed on cost recovery by the MOCs. They are, instead, allowed to recover operating expenses within the first five years and to enjoy an agreed percentage of the profit.

In order to ensure that the above provisions are adhered to, PSCA required the establishment of a management committee within thirty days of the date the contract becomes effective. The committee comprises ten members, with five members each from the NNPC and the contractor. The power to appoint the chairman of the committee rests with the NNPC; the power to appoint the secretary rests with the contractor. Similarly, the NNPC, through the committee, monitors and controls the operations of all the companies engaged in PSCs. These powers to monitor and control the operations of the contract, as outlined by PSC Act include:

- a. The revision and approval of work plans and budget estimates.
- b. Consideration and decision-making on matters relating to relinquishment of contract areas that is consistent with the provisions of the contract and petroleum laws.
- c. Monitoring of contractors to ensure they correctly implement the provisions of the accounting, lifting, procurement, and project implementation procedures and all amendments and revisions thereto as agreed to by the parties.

- d. Monitoring of contractors to ensure that they provide annual budget estimates for building desired capacity of the companies' personnel in all aspects of petroleum operations.

One of the important aspects of the PSC is how oil is shared between the host government and the oil companies (see Figure 3.1). In Nigeria, oil production under a PSC is shared as cost oil, royalty oil, tax oil, and profit oil.

- a. Royalty oil: this is to be allocated to the NNPC in such a quantity that it will generate a sum equal to the actual royalty payable during each month
- b. Cost oil: this is to be allocated to the MOC in such a quantity that it will raise an amount sufficient enough for the recovery of operating cost.
- c. Tax oil: this is to be allocated to the NNPC in such a quantity that it will generate an amount equal to the PPT liability payable each month.
- d. Profit oil: this represents the balance of crude oil available after the deduction of royalty oil, tax oil, and cost oil; it is to be allocated to each party based on a predetermined sharing formula.

The PSC, unlike the JV contracts, releases Nigeria from the burden of providing up-front cash calls needed for operation. Moreover, lack of E&P expertise coupled with the right of ownership of the concessions make the PSC a viable option for Nigeria. However, in an investigation into an alleged missing amount of N2.8 billion from the NNPC account in 1980, it was found that the PSC between the NNOC and Ashland Oil had no

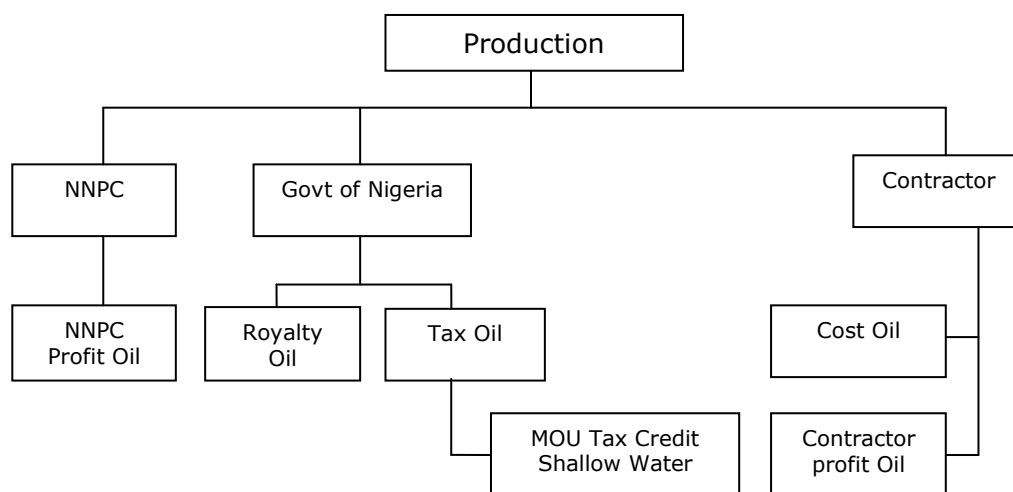
benefits whatsoever for the NNPC; the underpinning features of the PSC were inequitable and lopsided in favour of Ashland oil (Nlerem, 2010). Accordingly, various revised versions of PSCs were issued.

In 1990, Nigeria issued a model PSC which provided for 30% as cost oil, 40% as tax oil, and 30% as profit oil to be shared between the NNPC (35%) and MOCs (65%), with taxes due on the MOCs to be paid out of their 65% share in accordance with the provisions of the companies income tax act (CITA)²⁴. Similarly, in 1991 Nigeria issued another model PSC that modified the earlier version. The model provided, among other things, that tax oil is to be taken in kind by the government while the MOCs are to recover their operating costs from the cost oil sold by the company.

These modifications to PSCs were necessary in order to ensure the government achieved the maximum gain possible from the use of PSCs in Nigeria. Despite all the modifications over the years, PSCs in Nigeria, Nlerem (2010) asserts, seems to be attractive to the MOCs because of the favourable fiscal regime which it gives to them.

²⁴ See Cap C 21, Law of the Federal Republic of Nigeria

Figure 3.1: Nigerian PSC Structure



Source: NNPC, 2011

3.5.2.1 PSC fiscal provisions

The Nigerian PSC is mainly governed by the provisions of the PPTA as amended and the Deep Offshore and Inland Basin PSC Act of 1999 as amended. Some of the tax provisions include the following:

1. Royalty: the royalties payable under PSCs are determined by relevant sections of the Deep Offshore and Inland Basin Act, 1999 (as amended) and the provisions of the Petroleum (D&E) Regulations, 1990 (as amended (see Table 3.5 for the rates)). Considering the fact that most Nigerian deep offshore oil fields are deeper than the 1000 meters limit where the royalty payable is 0%, it will be right to conclude that royalties on offshore PSCs are effectively not paid.
2. Petroleum profit tax: section 3 of the deep offshore and inland basic act provides for a PPT of 50% flat rate, as earlier noted, on the chargeable profits of companies engaged in PSCs in Nigeria. This tax liability shall be split between the NNPC and MOC in the same ratio as profit oil is shared.

3. Investment tax credit/allowance: Section 4 of the deep offshore and inland basin provides for 50% investment tax credit on qualifying capital expenditure incurred up to 1st July, 1998 and a 50% investment tax allowance thereafter. Investment tax credit is deducted from the total amount of tax payable while investment tax allowance is deducted from taxable income.

4. Cost recovery: MOCs engaged in PSCs are allocated enough cost oil to enable them to recover their operating costs which comprise tangible drilling costs, capital expenditures, intangible drilling costs, and qualifying non-capital expenditure. All capital costs shall be recovered in equal instalments over a period of five years or over the remaining life of the contract, whichever is less. However, qualifying non-capital expenditures are, on the other hand, recovered in the year in which the expenditures are incurred.

5. Ring fencing of operating expenses: Section 8 of the deep offshore and inland basin act provides for the ring-fencing of all operating expenses incurred on different oil fields. Although, the 1993 PSC appears to have permitted the consolidation of operating expenses on different licenses for tax purposes (see Clause 8(1) (b) of the 1993 PSC), the NNPC contends that the interpretation given to the clause is for the purpose of cost recovery in respect of an MOC that has more than one oil prospecting license, in which proceeds from each license area is ring-fenced in accordance with Section 8(1) of the deep offshore act.

6. Profit split: the balance remaining after the allocation of royalty, tax, and cost oil, as discussed earlier, is split between the NNPC and the MOC according to predetermined percentages. Where a discovery cannot

be commercially developed at the profit splits the PSC allows the NNPC and the contractor to come together and agree on an appropriate terms and conditions that will allow for the development of such discovery for the benefits of both the NNPC and the MOC. Table 3.9 below presents Nigeria’s current profit splits.

Table 3.9: Profit split between the NNPC and the MOCs

Production (barrels)	2002 profit split (%)	
	Government	Contractor
0-350	30	70
351-700	35	65
701-1000	50	50
1001-1500	55	45
1501-2000	65	35
Over 2000	Negotiable	

Source: Chukwu, 2009

3.6 Administration of Nigerian petroleum tax system

This section reviews the administration of Nigerian petroleum tax system under two headings: tax functions and administrative institutions.

3.6.1 Tax functions

The administrative functions of the Nigerian petroleum tax system, as the case with most petroleum tax regimes across the world, is broadly classified into routine and non-routine functions.

3.6.1.1 Routine functions

As stated earlier, routine functions involve four different but interrelated activities: registration of taxpayers; processing of tax returns; making of tax assessment; and collection of tax.

First of all, as in most oil producing countries, the number of MOCs operating in the Nigerian petroleum sector is few. There are currently 18 MOCs operating in Nigeria (NIPC, 2012). Of this number, Shell, Chevron, Taxaco, Mobil, Agip, Elf, and Total are the major operators and together they produce over 90% of Nigerian crude oil (Nwokeji, 2007).

Second, Section 30 (1) of the PPTA, 1990 (as amended) requires MOCs, for each accounting period, to make up their final accounts and also prepare their estimated adjusted and assessable profits for the period and compute their estimated tax liabilities for that period and send them to the board. Where an MOC cannot deliver its accounts and particulars within the time prescribed under section 30 of the Act, or fail to comply with notice given to it under section 31 or 32 of the Act or extension granted to it under section 34 of the Act, the board may in accordance with the provisions of section 35 (3) proceed to estimate the amount of tax to be paid by such MOC and make assessment accordingly. This

Third, tax assessments for all companies engaged in petroleum operations in Nigeria are made in such a form and manner that the board authorise and shall contain, according to section 37(1) of the PPTA, the name and addresses of the companies assessed and also in respect of each MOC for each of its accounting periods, the accounting period concern, amount of chargeable profits, assessable tax and chargeable tax for that period. A copy of such assessment and of each amended or revised assessment is then filed in a list which shall constitute a list called the assessment list (section 37(3)). All MOCs whose names appear on an assessment in the assessment list are served with a notice of

assessment by the board stating its accounting period, chargeable profits, assessable profits and chargeable tax charged and assessed, place for the payment of the tax and an information concerning its right for objection as allowed under section 38 (2) of the Act.

Fourth, the collection of taxes, except in cases where objection or appeal is pending, in which case the board shall only enforce payment for the part which is not in dispute, shall in accordance with section 45 of the PPTA be payable in equal monthly instalments together with a final instalment.

The first monthly instalment is to be paid not later than the third month into the accounting period in an amount equal to one-twelfth of the total liability or any other equal monthly proportion where the accounting period is less than a year. Each of the subsequent instalments shall be due not later than the last day of the month in review. The thirteenth or the final payment shall be due within 21 days after a notice of assessment is served on the company.

Where a tax due remains unpaid, section 46 of the PPTA imposes a penalty of an amount equal to 5% of the instalment due be added to the instalment outstanding. Accordingly, the board shall proceed to issue a demand notice to such defaulting MOCs and if payment is not effected within a month from the date of the service of the notice, the board may then proceed to enforce payment through all legal means including suing the company in a court of competent jurisdiction.

3.6.1.2 Non-routine functions

As Calder and McPherson (2008) noted, non-routine functions include valuation of petroleum resources, tax audit, and dispute resolution. In this subsection, these issues as they relate to the Nigerian petroleum taxation system are discussed.

First, crude oil valuation in Nigeria, just like in any other oil producing nation, involves the two basic administrative challenges of establishing production volume and oil price. As discussed earlier, the price for Nigerian crude oil is established, from time to time, by the Minister of Finance. On the other hand, the establishment of production volume in Nigeria is the responsibility of Department of Petroleum Resources (DPR). The basic activities employed in volume produced are flow metering and temperature measurement. Flow metering is the process of using a meter to measure the volume of crude oil as it passes through pipelines while temperature measurement is used to determine the bulk crude oil in the storage tank for the computation of standard volume of crude oil.

Second, the audit of companies engaged in oil operations in Nigeria is carried out by the Nigeria Extractive Industry Transparency Initiative (NEITI) through reputable independent auditors that are selected through an open, transparent, and competitive process (NEITI, 2005). The audit generally covers three broad areas, namely: financial audit; physical audit; and process/governance audit.

- a. Financial audit: this involves the examination of financial flows and the determination of the chain of the custody of finances in order to hold specific agencies accountable. This audit reconciles a

company's payments made by MOCs with receipts by the CBN and with the records of the FIRS and DPR. The reconciliation is achieved by verifying the calculations of the FIRS and the DPR with a sample of some selected MOCs' tax returns and royalty statements.

- b. Physical audit: this exercise ensures that the volume of crude oil produced is correctly reported by the MOCs and also ensures that each MOC's reported production volume agrees with the volumes the government uses for royalty and tax calculations. This audit, therefore, looks into some highly technical areas characterised by metering and temperature and pressure measurements, among others.
- c. Process audit: this is principally on governance issues in the industry. It investigates how the major agencies in the sector run the business including an assessment of whether the Crude Oil Marketing Department (COMD) of the NNPC is accurately pricing the government share of the equity oil. The audit also includes an investigation of the integrity of NNPC's upstream division.

Third, an oil company that is not satisfied with an assessment made upon it may complain to the board for amendment. Where the board refuses to amend the assessment as desired by the company, the company may, within 30 days after notice of refusal is served to it, appeal against the assessment to the appropriate Appeal Commissioners upon giving a written notice to the board and to the secretary to such Commissioners. Section 41(2) of the PPTA requires the company to specify the following in its appeal:

- a. The official number of the assessment and the period to which it relates;
- b. The amount of tax charged by the assessment;
- c. The date in which the board served the company with a notice of refusal to amend the assessment;
- d. The precise reasons for appealing against the assessment; and
- e. A formal address of the company to be used by the secretary of the appeal Commissioners for the purpose of service of notices, precepts, or other documents.

Similarly, where the company is still dissatisfied with the decision of the Appeal Commissioner, section 42 of the PPTA entitles such company to appeal to the Federal High Court after giving notice in writing to the board within 30 days after the commissioners' decision.

All appeals are heard in closed door unless otherwise directed by the judge on the application of the appellant. The cost for any appeal is discretionarily fixed by the judge hearing the appeal. Where an assessment becomes final and conclusive, section 43(2) of the Act requires any tax overpaid be repaid.

3.6.2 Petroleum tax agencies

Nigeria is one of the countries that assigned the responsibility of petroleum tax administration to many agencies. Specifically, there are five agencies responsible for the administration of petroleum tax in Nigeria. These agencies, according to ESMAP (2004), are: Federal Inland Revenue Service (FIRS); Central Bank of Nigeria (CBN); National Petroleum Investment Management Services (NAPIMS), Department of

Petroleum Resource (DPR); and the Ministry of Petroleum Resources (MPR). A brief discussion of their responsibilities as they relate to petroleum taxation is given below

1. Federal Inland Revenue Service (FIRS): in accordance with the FIRS (Establishment) Act of 2007 the FIRS is responsible for the assessment and collection of PPT and other taxes accruing to the government from JVs and PSCs. As the nation's main tax institution, it empowered by Section 8 of the FIRS Act (2007) to assess, collect, account and enforce payment of all taxes due to the government from all the MOCs operating in Nigeria.

2. Central Bank of Nigeria (CBN): this is the apex bank of the nation. Its main objectives are to: issue legal tender currency in Nigeria; maintain external reserve sufficient enough to safeguard the international value of the Nigerian currency; promote monetary stability and also ensure sound financial system; and act as banker and financial adviser to the Nigerian Federal government. In relation to petroleum taxation, the CBN plays the following roles:

- a. To act as depository for royalties, petroleum profit, and all other direct petroleum taxes. The CBN maintains offshore bank accounts into which the MOCs are instructed to pay in all petroleum taxes due to the government; and
- b. To provide information on all taxes it collected for reconciliation with the petroleum tax assessment of the Federal Inland Revenue Service (FIRS) and the Department of Petroleum Resources (DPR).

3. National Petroleum Investment Management Service (NAPIMS): this is the upstream wing of the NNPC and oversees Nigeria's investments in the JVs, PSCs, and SCs. The main responsibility of NAPIMS is to manage, on behalf of the NNPC, all Federal government's interest in upstream petroleum operations. Specifically, the NAPIMS ensures the maximisation of petroleum profit tax and guarantee a higher margin on investment through efficient mechanisms for monitoring and reducing cost. It also ensures that all the nation's petroleum contractual arrangements (i.e. JVs, PSCs, and SCs) are efficient and effective.

4. Department of Petroleum Resources (DPR): this is the regulatory arm of the Nigerian petroleum sector. It is charged with the responsibility for regulating, enforcing, and monitoring the activities of the oil sector in accordance with the provisions of relevant laws which include; Petroleum Act (1969); Mineral Oils (Safety) Regulations; Petroleum Offshore Oil Revenue Act (1973); and NNPC Act (1977). Its specific functions and responsibilities include:

- a. to supervise all the operations being carried out in the nation's petroleum industry under licences and leases in order to ensure compliance with all applicable laws and regulations in accordance with the industry's good practice;
- b. to advise the government and other relevant agencies on technical matters and policies that are relevant in impacting on the administration and control of the nation's petroleum resources;

- c. to ensure timely and adequate payments of all rents and royalties by all the companies engaged in petroleum operations as at when due; and

5. Ministry of Petroleum Resources (MPR): The MPR is the top government body charged with the responsibility for the formulation and implementation of government policies and objectives relating to the nation's petroleum industry. In relation to petroleum taxation, the Ministry has the role of administering government interests in the petroleum sector in order to maximise full economic benefits expected from the nation's petroleum resources and also ensures the optimisation of government interests in all petroleum contractual arrangement.

3.7 Conclusion

On a general note, this chapter reviewed the Nigerian petroleum tax system with emphases on its design and implementation. The chapter reviewed the Nigerian petroleum tax policy objectives as well as the mix of tax instruments employed. Similarly, a review was also made of the laws governing the Nigerian petroleum tax system covering both the PPTA as well as the MOU between the NNPC and the MOCs. The two main Nigerian petroleum fiscal regimes were also reviewed. The chapter also reviewed both the administrative functions as well as agencies of the Nigerian petroleum tax system.

A number of issues were revealed from the analysis. First, it is evident that the Nigerian petroleum policy has undergone a series of reforms, all of which were geared toward the government objective of controlling the

oil resources and also to get a greater share of the oil revenue. Second, it is also clear from the review that central to the Nigerian petroleum tax system is the desire to ensure that maximum revenue is accrued to the government from oil and gas activities while at the same time guaranteeing the investors a reasonable return on investment. This is consistent with what all oil producing nations are pursuing.

Third, the review also revealed that Nigeria employs a mixture of petroleum tax instruments. This is done in order to broaden the revenue base of the government, on the one hand, and also to create an identity of interest between the government and the MOCs. Fourth, the analysis revealed that Nigeria is moving away from its traditional JV contracts to PSCs. The JV arrangement is becoming out of fashion in Nigeria because of the growing inability of the government to meet its cash calls commitments.

Finally, it is evident in the analysis that Nigeria employs a multi-agency approach in the administration of its petroleum tax system. This approach, as noted earlier, has the advantage of reducing the risk of serious error and collusion as no single office controls the entire administrative procedures.

Chapter Four

Economic Rent as a Theoretical Framework for the Design of a Petroleum Tax System

4.1 Introduction

The concept of economic rent has, historically, underpinned the work of economists (Wessel, 1967) and is broadly divided into two versions; i) Ricardian rent and ii) Paretian rent (see Wessel, 1967). The Ricardian version has its origin traced through Marshal and Mill and then to Ricardo, while the Paretian version has its origin from the work of Pareto²⁵. Although definitional differences exist between the two versions²⁶, many writers do not recognise such difference and thus use them interchangeably, while those that see the dissimilarity adopt either of the definitions that suit their thinking (Wessel, 1967).

In spite of the differences that exist between the Ricardian and Paretian School of thoughts, as explained above, they are, however, united on the ground that economic rent affects land only. This position is strongly opposed by modern economists, who hold the view that "all factors including land have alternatives. Therefore payment of rent should be attributed to all factors" (Jain and Ohri, 2009:308).

²⁵ Alfred Marshal, John Stuart Mill, David Ricardo, and Vilfredo Pareto were among the most influential economists of their times.

²⁶ The Ricardian define rent as "... the excess amount earned by a factor over the sum necessary to induce it to do its work", while Paretians view economic rent as "... the excess of earnings over the amount necessary to keep the factor in its present occupation" (Shepherd, 1970:209).

There are two basic reasons for this modern view on economic rent. These reason, Jain and Ohri (2009) noted, are: i) land has alternative uses and part of the rent paid for putting it into any one use would necessarily have to be paid to keep it in its present use, and ii) other factors of production (labour, capital, and enterprise) may also earn surpluses over and above what is necessary to keep them in their present use. It, thus, appears that all factors of production are alike: part of the payment for these factors of production is necessary to keep them from transferring to other jobs and the other part is a surplus over and above what is necessary to keep the factors in their present use. It is this surplus, which is not only peculiar to land, that is called economic rent in the view of the modernists.

The rest of the chapter is divided into seven sections. Section 4.2 discusses the meaning of the concept of economic rent. This is followed by section 4.3 which explains the different types of economic rent. Section 4.4 addresses the application of economic rent in the petroleum industry. The reasons for the adoption of the economic rent theory as a theoretical framework for the design of petroleum taxation are discussed in section 4.5. Section 4.6 deals with some of the theories, other than economic rent, that could be applied as a framework for the design of petroleum tax system. Section 4.6 concludes the chapter.

4.2 The meaning of economic rent

Economic rent (see Figure 4.1), just like any other economic concept, has been variously defined. Tollison (1982) defines it as the "excess

return above normal levels that take place in competitive market”.

Dickson (1999:1), on the other hand, sees economic rent is:

"The true value of the natural resource, the difference between the revenues generated from resource extraction and the costs of extraction. These costs include the costs of employing factors of production and their opportunity costs"

Economic rent, according to Banfi et al (2003:2), is defined as:

"The surplus return above the value of the capital, labour and other factors of production employed to exploit the resource. It is the surplus revenue of the resource after accounting for the costs of capital and labour inputs".

Similarly, Stiglitz (1996:298-99), describes economic rent as:

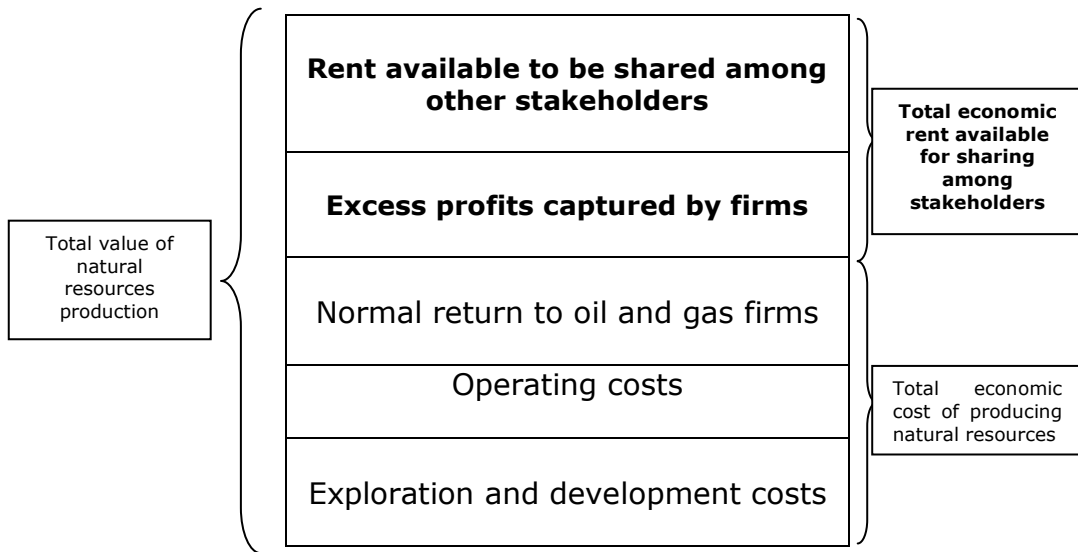
"Economic rent is the difference between the price that is actually paid and the price that would have to be paid in order for the good or service to be produced . . . Anyone who is in the position to receive economic rents is fortunate indeed, because these "rents" are unrelated to effort . . . Firms earn economic rent to the extent that they are more efficient than other firms . . . Consider a market in which all firms except one have the same average cost curve, and the market price corresponds to the minimum average cost of these firms. The remaining firm is super-efficient, so its average costs are far below those of the other firms. The company would have been willing to produce at a lower price, at its minimum average cost. What it receives in excess of what is required to induce it to enter the market are rents—returns on the firm's superior capabilities . . ."

Cordes (1995:26), on the other hand, describes economic rent in a different but consistent way as:

“The difference between existing market price for a commodity or input factor and its opportunity cost. Opportunity cost is the reservation price or minimum amount owners of the goods or service would be willing to accept . . . Thus, economic rent is a surplus—a financial return not required to motivate desired economic behaviour. Its existence implies predominantly distributional rather than resource allocation consequences. From a public policy viewpoint all rents could be taxed without altering current decisions on production and consumption. Resource owners would still earn acceptable or needed returns on their investment so output would remain the same. Consumption levels would not change because under competitive conditions producers cannot shift the tax burden to raising prices. As a result, economic rent could be redefined as the magnitude of returns which could be taxed away without causing the pattern of resource use to be altered”.

Economic rent is, therefore, extra revenue earned by investors. It is a bonus (Raja (1999) which even if taxed away can still allow companies to realise a rate of return acceptable on their investment. As a result, many scholars, including Rowland and Hann (1987), are of the view that economic rent constitutes a justifiable base for petroleum taxation.

Figure 4.1: Division of production value into economic rent and economic cost of production



Source: Anderson, 2006

4.3 Types of economic rent

Different types of economic rent have been identified in the economic literature. The knowledge of the differences that exist between them, which is important for taxation policy, would serve as an important step in explaining the suitability of economic rent as a base for petroleum taxation.

4.3.1 Scarcity rent

Scarcity rent is also referred to as Hotelling rent²⁷. It is the “excess of marginal revenue above marginal cost” (Khanna, 2001:17). In a more detailed way, Kooten and Bulte (2001:65) define scarcity rent as:

“The difference between marginal revenue and marginal production cost that can only come as a result of the natural or policy induced scarcity of the resource”. It is the rent that results from the scarcity of resource”.

²⁷ The term scarcity rent is referred to as Hotelling rent because it was first coined by Harold Hotelling in 1931 in his famous work “The Economics of Exhaustible Resources”

Nordhaus and Kokkelenberg (1999:215), on the other hand, define scarcity rent as “the difference between price and extraction cost when resource is extracted such that the net benefit maximised over time”. Scarcity rent, therefore, represents the “forgone future profits as a result of extraction today” (Dickson, 1999:2).

Scarcity rent, Raja (1999) noted, occurs only in the short run before they are computed away. Such rents, Kooten and Bulte (2001:65) noted, are “earnings over and above that required to maintain a firm in business in the short run”.

The intuition behind the Hotelling rule²⁸ is clear; net price must rise at the rate of interest as a condition of equilibrium, if not the present value of the net price that could be received from selling the resource in some periods would be higher in some other periods. The implication is that, resource owners would not be indifferent about when to extract and sell their resources.

4.3.2 Differential rent

This is also called the Ricardian rent. Ricardo was of the view that land varied in fertility and when demand was economically sufficient to grow corn on less fertile land, high profits were earned by anyone owning very fertile land.

Ricardo (1971) is of the view the all units of land have different grade in terms of fertility and location. The application of the same amount of

²⁸ Hotelling rule refers to the principle behind economics of exhaustible resources as coined by Harold Hotelling, and it states: “for a nonrenewable resource, net price (market price minus marginal cost) must rise at the rate of interest in competitive market equilibrium” (Livernois, 2009).

factors of production – labour, capital, and other cooperating resources – on these units of land, Ricardo (1971) argued, gives rise to differences in productivity levels. This difference or the excess arising from the superior unit of land over the inferior units is what Ricardo (1971) called economic rent.

Although some scholars have argued that corn was expensive because of the high rents paid to land owners, the argument central to the Ricardo's theory was that price of corn was a function of supply and not the levels of rents as Ricardo (1971:44) rightly put:

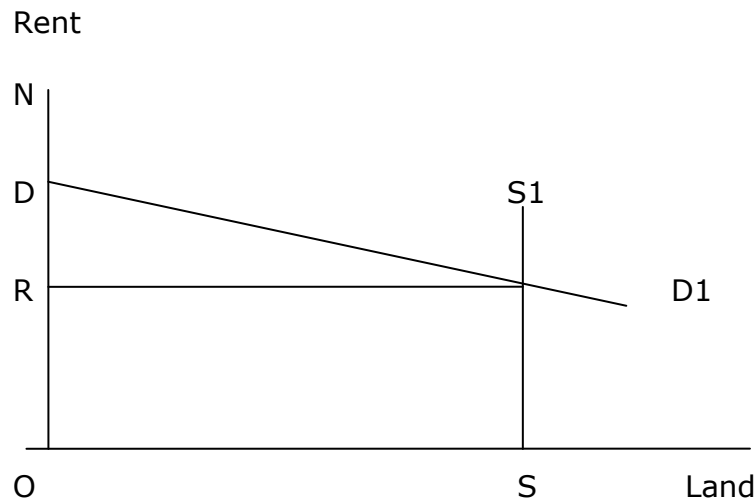
“Corn is not high because a rent is paid, but a rent is paid because corn is high and it has been justly observed that no reduction would take place in the price of corn, although the landlord should forego the he hole of their rent”.

Figure 4.1 below presents a diagrammatical analysis of the Ricardian rent theory. From the figure, rent is indicated on the vertical axis and quantity of land on the horizontal axis. The vertical line SS1 indicated the fixed supply of land such that OS hectares will be supplied whatever the rent offered or paid, if above zero. The demand for land is derived from the demand for corn (that is the product) and is indicated by the downward slope DD1. The equilibrium position in the land market fixes the rent paid at OR on the vertical axis.

From the above analysis, two conclusions can be deduced: i) land rent is purely determined by demand. This is because as supply is fixed, any variations in rents can occur through shifts in the demand curve DD1, and ii) taxes levied on rents will neither affect the rent paid nor the

quantity of land supplied. Land is fixed at all prices and rent paid will be OR, no matter what proportion of this is taken in tax (see Figure 4.2)

Figure 4.2: Ricardian Rent Theory



4.3.3 Quasi rent

Quasi rent was first introduced by the Economist Alfred Marshall but he stopped short of giving explicit definition of the term²⁹. Marshall was, however, of the view that differential surpluses that arise from a factor of production whose all times supply is fixed should be called rent, while temporary gains which a factor of production earns due to temporary limitation of its supply should be called quasi rent

²⁹ While there were no disputes as to the fact the concept of Quasi rent was introduced by Marshall, Stonier and Hague (1964:292) are of the view that Marshall has not explicitly define the term quasi rent when they state thus "there is no explicit, formal definition of quasi-rent in Marshall, and the term has been used both by him and by other writers in a variety of related but not identical senses".

Stonier and Hague (1964:93) viewed quasi rent thus:

“The quasi-rent of a machine is its total short-run receipts less the total costs of hiring the variable factors used with it and of keeping the machine in running order in the short run”

Kooten and Bulte (2001:65), on the other hand, define quasi rent as “earnings over and above that required to maintain a firm in business in the short run”. Short run rent, Nakhle (2009) noted, is the difference between market price and supply prices of variable inputs such as labour and power and is expected to be greater than long term rents.

4.4 Economic rent within the context of a Rentier State

The meaning and concept economic rent has adequately been discussed in the preceding sections. In this section, the concept of economic rent is explored further within the context of the theory of the rentier state³⁰. The theory was first coined by Hossein Mahdavy and has since been employed by Middle East experts in their discussion about the Arab community (Yates, 1996).

In its broadest sense, rentier state is defined as “those countries that receive on a regular basis substantial amounts of external economic rent” (Mahdavy, 1970:428). It is also defined as “a state reliant not on extraction of the domestic population’s surplus production but on externally generated revenues, or rents, such as those derived from oil” (Anderson, 1990:61). The stage at which an oil producing country could be called a rentier state is arbitrary. However, Beblawi (1987) is of the

³⁰ The theory of the rentier state is a theory that concerns with the mode of the development and nature of states whose economies is dominated by external rent particularly oil rent (Yates, 1996).

view that for a state to be classified a rentier state four basic characteristics must be present. First, the economy must be one where rent predominates. Second, the origin of such rent must be external source meaning domestic rent, even if it is substantial, is not enough. Third, only few are engaged in the generation of rent with the majority involved in distribution and consumption. Fourth, the government is the principal receiver of the rent.

The main feature of a rentier state, according to Luciani (1987), is that the external rent coming into the state tends to free the state from the need to extract income from the domestic economy. With the significant contribution coming from the oil sector, Mahdavy (1970:432) noted, oil producing countries are able to embark on large public expenditure programs without necessarily resorting to domestic taxation. Mahdavy (1970:429) further noted that the prices of oil export are clearly separated from the cost of domestic production such that Mahdavy (1970:429) put thus:

“the input requirement of the oil industry from the local economies – at least for the inputs that have an opportunity cost – are so insignificant that for all practical purposes one can consider oil revenue almost as free gift of nature”

While classification as a rentier state is synonymous to oil-riches, there are, nevertheless, the consequences of being a rentier state, among which include i) slow rate of economic growth relative to their resource poor countries counterpart (Sachs, 2000) and ii) heavy dependence on importation of goods and services instead of providing the momentum for the growth of productive sector.

Kuru (2002) asserts that most of the rentier states are from the Middle East and North Africa while Anderson (1990), on the other hand, include Nigeria and Venezuela as among the rentier states outside the Middle East. The classification of Nigeria as a rentier state was a direct result of the oil boom of the 1970s and 80s (Falola and Heaton, 2008). While the oil boom earns a considerable amount of revenue for the government, it nevertheless causes serious setbacks to the Nigerian economy, particularly its agricultural sector as discussed in chapter one.

4.5 Application of the concept of economic rent in the petroleum industry

The application of the concept of economic rent in the petroleum sector rests on the close association of issues in the mineral industry with the term economic rent. These issues, as Tilton (2003) noted, include:

1. The basic raw materials that are being exploited in the mining sector are in most jurisdictions owned by the government. For this reason, the state should receive compensation above the normal taxes paid by other industries. This addresses the idea of surplus return;
2. Mineral resources are nonrenewable; as such an opportunity cost is incurred for consuming the resources today. In effect, the availability of these resources in the future either will rely on poorer quality of resources that are expensive or the usage of alternative materials and;
3. Acknowledging the fact that many projects have not been earning competitive returns on their investments, there are some others that are regarded as bonanzas. Certainly, these bonanzas tend to draw the

attention of the public and raise questions on why the proceeds from mines should be equitably shared among the company and government.

On a more specific term, each of the three types of economic rent discussed above can accurately be applied in the petroleum sector. This is explained in the following subsections.

4.5.1 Scarcity rent

Petroleum is an exhaustible resource; once burned, it cannot be reused. Against this background, Hotelling (1931) pointed out that in the case of all exhaustible resources price should exceed marginal cost of production even if the market were perfectly competitive. This notion, called the Hotelling rule, can best be understood using an illustration.

Suppose for some unavoidable reasons, the world production of crude oil could only be 80% next year relative to the amount being produced this year. If there is a short run price elasticity of demand of 15% that would imply next year's price of crude oil would increase, then it would pay anyone to buy the crude oil today and store it with a view to selling into next year's favourable market. On the other hand, it would be more efficient for the owner of any crude oil reserve to leave the oil in the ground and then wait to produce it next year when the price has risen.

Under a competitive market, for the owner to surrender the use of his exhaustible resource, he will be given a compensation that just leaves him or her indifferent between producing now or in the future. This compensation for the sacrifice is the economic rent.

4.5.2 Differential Rent

Ricardo, as noted above, holds the view that agricultural land could be separated according to its fertility; the most fertile land produces a given quality of food at a lower cost than the second most fertile class and so on.

Petroleum, just like agricultural land, also differs in quality and comes in various types defined according to their physical or chemical properties. However, the most common approach is to describe crude oil by its density, often referred to as gravity number (Hook, 2009). These varieties of crude oil are broadly classified in two main types, viz; light and heavy.

Refining of heavy and sour crude oils is complicated³¹, and thus cost ineffective. Lighter crude oil, on the other hand, is easier to distil into high value, high quality products. As a result they are sold at a premium higher than heavier crude oil. This analysis concurred with Ricardo's notion of economic rent.

4.5.3 Quasi rent

Quasi rent, as noted above, is returns that accrue to firms from past investment and innovative practices. Firms can adopt innovative practices and undertake strategic investments in areas such as advertising and manpower training to achieve higher productivity and

³¹ Refining of heavy crude oils is complicated because of the presence in them of many characteristics - low gravity, high viscosity, high initial boiling point, high carbon residue and low hydrogen - which require great deal of processing to yield quality products (Nygren, 2008).

better reputation that would eventually lead to higher prices or lower costs.

In the petroleum industry, companies expect returns from their investments, part of which represents a return on exploration expenditure that might have been undertaken in the past. This return is called a quasi rent on exploration. This rent, though it might not allow the generation of satisfactory return on exploration, will not result to the closure of a current mine (Garnaut, 2010). Similarly, an oil company expects return on the original development of an oil field. This, on the other hand, is called quasi rent on development expenditure. Again although tax could transfer part or all of that quasi rent from the company to the government, Garnaut (2010) further noted, production in that oil field could not be affected.

In the short-run the supply of crude oil is fixed since significant investment in exploration is needed to increase known reserves. While the international market for crude oil is competitive, producing nations have the power to award concessions MOCs the right to explore crude oil and supply the oil market at the competitive price. The difference that exists between the average variable cost of production and the global market price for crude oil represents quasi rent. The question as to whether such rent flows to the company or the host government is a policy issue. Most often, however, this rent is apportioned between the government and the oil company in accordance with an agreed ratio.

4.6 Economic rent theory as a theoretical framework for the design of petroleum tax system

The theory of economic rent is one of the several theories that are applicable to taxing of petroleum resources. This section discusses the reasons why the economic rent theory is adopted in this research as a theoretical framework for the design and implementation of petroleum taxation.

First and foremost, the reason that informed the decision to adopt the economic rent theory as a framework is that taxes levied on economic rent will not act as a disincentive on firms to undertake any activity since rent is not a requirement for the continuation or initiation of business operations (Nakhle, 2008). This is very important for producing nations because, as noted in the second chapter, attraction of as much foreign investment as possible into the petroleum sector is arguably a requirement for the achievement of the main objective of ensuring that a fair share of the petroleum resources accrue to the host government without jeopardising the interest of the investors.

Second, a tax regime that has been designed to capture economic rent tends to increase government take when economic rent increases, and reduces government take when economic rent decreases (Nakhle, 2008). This is consistent with the principles of a flexible tax regime which provides the government with an adequate share of economic rent under varying conditions (Tordo, 2007). As markets and project conditions change over time, Tordo (2007) further asserts that flexible tax regimes become stable and this limits the need for renegotiation of contracts.

Third, taxing economic rent is argued by many scholars to be fair (Otto et al, 2006), particularly to the community (Swan, 1984). McLean (2006), for example, based his argument on the reason given by Winston Churchill:

“The roads are made, the streets are made, the railway services are improved, electric light turns night into day, electric trains glide to and fro...and all the while the landlord sits still. Every one of these improvements is effected by the labour and at the cost of other people – yet his [the landlord’s] land value is enhanced. When the land is eventually sold, it is sold by the yard or inch at ten times, twenty times or even fifty times its agricultural value...”

Analysing Churchill’s statement, it is apparent that landowners, in their capacity as landowners, have done nothing or very little to procure the gain they enjoyed from the appreciation of the value of their land. It was, rather, conferred by the state acting on behalf of the citizens. The citizens, therefore, ought to have or see some of the returns. The same argument also applies to the petroleum industry, as Otto et al (2006:23) rightly put it:

“Why ... should the benefits created by the country’s geologic legacy not flow to all its citizens, rather than to the owners of mining companies, many of whom may be foreigners?”

Finally, most taxes distort the economy and diminish efficiency. For example, an income tax on labour has the effect of shifting the supply curve of labour downward. This results in the society consuming less output relative to when such tax is not levied. Taxing economic rent, on the other hand, does not affect the availability of labour, capital, and other factors of production, and thus, free of such distortions (Otto, et al,

2006). In other words, by shifting taxes off labour, capital, and other factors of production and on to economic rent, growth and employment would be stimulated and many distortions in the economy would be avoided.

4.7 Other theories that could be applied as framework for petroleum taxation

There are other theories, apart from the economic rent theory adopted for this study, which could be applied as a framework in the design of petroleum taxation. Two of these theories, namely; Principal-Agent theory and the Transaction Costs theory, as identified applicable by Osmundsen (1998) are discussed in the following subsections.

4.7.1 Agency theory

Agency theory is mainly concerned with proffering solution to two main problems that occur in agency relationship. These problems, according to Eisenhardt (1989), are: First, the agency problem that arises when i) there is conflict between the goals or desires of the principal and the agent, and ii) it is difficult or expensive for the principal to verify what the agent is doing. The problem here is that the principal cannot verify whether the agent has acted rightly. Second, is the problem of risk sharing when the principal and the agent have different attitude toward risk. In this respect the problem is that the principal and the agent might prefer different actions because of differences in risk preference.

Table 4.1 presents the main features of the agency theory.

Table 4.1: Main features of agency theory

Key idea	Principal-agent relationship should reflect efficient organisation of information and risk bearing costs
Unit of analysis	Contract between principal and agent
Human assumptions	Self interest, bounded rationality, risk aversion
Organisational assumptions	Partial goal conflict among participants, efficiency as the effectiveness criteria, information asymmetry between principal and agent
Information assumption	Information as a purchasable commodity
Contracting problems	Agency (moral hazard and adverse selection)
Problem domain	Relationship in which the principal and agent have partly differing goals and risk preferences (e.g. compensation, regulation, leadership, impression, management, whistle-blowing, vertical integration, transfer pricing)

Source: Eisenhardt, 1989

Within the context of the oil industry, the government, working on the notion that petroleum deposits are in many cases common resources whose ownership is shared by all inhabitants, acts on behalf of the residents as principal and by a discretionary licensing system grants the private companies (acting as agents) the right to extract petroleum resources in return for which they pay taxes (Osmundsen and Lovas, 2009). This relationship, between the government and the MOCs, has given rise to the agency problems identified above.

During petroleum extraction, MOCs incur costs and make discoveries of new reserves of crude oil. The oil companies then report their discoveries and total costs to the government. However, since in practice the government is not always there to observe the costs being incurred and the discoveries made, it does not know the true cost of exploration (Rahman and Helal, 2004). This explains the reasons why the agency theory is employed in the petroleum sector (Rahman and Helal, 2004).

While the agency theory is appropriate to be applied in the petroleum sector as discussed above, it is not employed in this study because the aim of the study is not to proffer solution to problems resulting from conflicts of interests that may arise in contractual relationship when host governments and MOCs happen to be differently informed³². This study, on the other hand, as discussed earlier, investigates the appropriateness of the Nigerian petroleum tax system in meeting the objectives for which it was designed to achieve. Similarly, the main objective of agency theory, is to explain how parties to a contract design a contract that minimise costs associated with agency problems. Again, this is not the subject of this research.

4.7.2 Transaction cost theory

The idea of transaction cost theory, coined by Coase (1937) and later improved by Williamson (1985), rests upon two basic assumptions about human behaviour: bounded rationality and opportunism³³. Economic actors are assumed to be rational but are limitedly so (Williamson, 1985). Decision makers strive or intend to make rational choices but are constrained by limited cognitive capacity. The bounded rationality assumption about economic actors has several implications, one of which is the impossibility of the economic actors to write exhaustive contracts that captures all possible future contingencies ex ante (Williamson,

³² Host governments and MOCs have different needs and interests which occasionally give rise to conflicts of interests between them. These conflicts of interest, in turn, leads in one of them or both them taking actions that may be against the interest of the other. It is this type of problems that agency theory deals with.

³³ Williamson (1985) assumed economic actors to be characterised by bounded rationality because of their limited cognitive abilities and their inabilities to receive, store, retrieve, and process all information free of errors. He sees the actors as behaving opportunistically through self interest – lying, cheating, incomplete or distorted disclosure of information.

1985). The problem of bounded rationality becomes more complex under highly uncertain or highly complex transactions. This is because the degree of uncertainty between contracting parties creates an information problem (Williamson, 1975). Without sufficient information, complete contracts cannot be written, hence incomplete contracts result (Williamson, 1996)³⁴.

Combined with uncertainty, bounded rationality may lead to opportunistic behaviour of the agent (Williamson, 1985). Opportunistic behaviour, according to Williamson (1985:47), is "lying, stealing, and cheating but it is also more subtle forms of deceit". This behaviour, Williamson (1975) noted, may be serious if a customer is in a small numbers exchange situation (Williamson, 1975)³⁵ due to investment in specific assets (Williamson, 1985).

Against the background of bounded rationality and opportunistic behaviour, Williamson (1985) suggests three features of a transaction as: frequency, uncertainty, and asset specificity. Of these three features, Williamson (1985) argues that asset specificity is the dominant feature because assets take the form of sunk costs in the case of contract breaking. When a contract, incomplete by nature that has as object a specific asset is signed, fundamental transformation takes place

³⁴ A contract is incomplete, according to Williamson (1996:368), if " 1) not all the relevant future contingencies can be imagined, 2) the details of some of the contingencies are obscure, 3) a common understanding of the nature of the future contingencies cannot be reached, 4) a common and complete understanding appropriate adaptations to future contingencies cannot be reached, 5) the parties are unable to agree on what contingent event has materialised 6) the parties are unable to agree to whether actual adaptations to realised contingencies corresponds to those specified in the contract, and 7) even though both the parties may be fully apprised of neither, in which event costly haggling between bilaterally dependent parties ensue"

³⁵ Small numbers exchange is a situation where a customer, because of small number of contractors in a market, has no alternative to change contractor if opportunistic behaviour is observed. He purchases from the same contractor at a high price.

(Williamson, 1985)³⁶. The implication is that the competitive situation transforms in a lock-in situation in which it becomes expensive for the buyer as well as the seller to switch for a new partner.

Fundamental transformation results in a bidding disequilibrium between the incumbent supplier and its competitors at the contract renewal stage to the advantage of the incumbent. The main reason that explains this incumbency advantage, as Harstad and Crew (1999) noted, is the difficulty to access a fair compensation for the transfer of physical specific assets between the losing incumbent and the entrant firm or the government. A summary of the main features of transaction theory is presented in Table 4.2

Table 4.2: Main features of transaction cost theory

Unit of analysis	Transaction
Focal dimension	Various types of asset specificity
Focal cost concern	Mal-adaptation
Contractual focus	Choice of (ex post) governance mechanism
Theoretical orientation	Comparative assessment
Strategic intent	Shareholder view
Sources of market frictions	Bounded rationality, uncertainty, information asymmetry, opportunism, and asset specificity

Source: Kim et al., 2005

In petroleum jurisdictions, host governments offer favourable contract terms to MOCs in order to attract them undertake E&P projects. Once a

³⁶ Fundamental Transformation refers to the transformation of a large numbers bidding competition at the outset into a small numbers supply relation during contract implementation and at contract renewal intervals for transactions that are supported by significant investments in transaction specific assets. In other words if, from the beginning, the parties have chosen to be partners from a competitive market, after signing the contract their relationship turns bilateral.

contract is signed, and expenditures necessary for each E&P project is incurred, the MOCs are likely to encounter hold-up problem posed by the ex post opportunistic behaviour of the host country. This is because investments by the MOCs in those specific assets cannot easily be moved to alternative E&P projects in other jurisdictions. As a result, the host countries tend to exploit the MOCs for larger rents (Teece, 1986). To respond to such opportunistic behaviour, MOCs need to develop effective safeguards to protect their "sunk investments". It is these contracting issues that transaction cost theory is employed to proffer solution to.

Just like the agency theory, transaction cost theory is not adopted in this study because the theory, as evidenced from the above discussion, is theory based on the opportunistic behaviour of the host government. As this study is not seeking to examine the opportunistic behaviour of the host country, the application of the theory is, thus, not appropriate for this study.

4.8 Conclusion

In this chapter, a review of the literature on the concept of economic rent covering the meaning, types, and its applicability in the petroleum industry was made. It was found that economic rent, as a concept, is suitable for application in the petroleum industry and particularly for the design of petroleum taxation as it does not act as a disincentive to investment. Similarly, a review of literature on other possible theories that could be applied in the design of a petroleum tax system revealed, among others, that the agency theory and transaction cost theory are

also appropriate. A discussion of these theories together with the reasons for not using them in this study was presented above.

Chapter Five

Research Methodology and Methods

5.1 Introduction

The aim of this chapter is to discuss the methodology and methods employed in this study. To achieve this aim, the chapter reviews philosophical assumptions, methods and techniques employed in research endeavour and on the basis of that discuss the assumptions and method employed for the study. Accordingly, the chapter is divided into six sections. Section 5.2 deals with the philosophical assumptions relating to ontology, epistemology, and human nature that researchers make while conducting research. This is followed by a discussion on the formulation of the research hypotheses in section 5.3. Sections 5.4 and 5.5 respectively deal with the various methods of data collection and methods of data analysis employed in research. Section 5.6 concludes the chapter.

5.2 Research Philosophy

The choice of methodology³⁷ to be adopted by a researcher depends on the sets of assumptions the researcher makes when conducting his or her research (Ryan et al, 2002). These assumptions which relate to ontology, epistemology and human nature are not totally objective or value free and as such they should be recognised and assessed by researchers in order to ensure that they are consistent with their

³⁷ Methodology, in its broadest term, refers to the way in which a researcher conducts research (Jonker and Pennink, 2010). In other words, methodology is simply the way or process in which one attempts to investigate and obtain knowledge about the real world (Hassard, 1991).

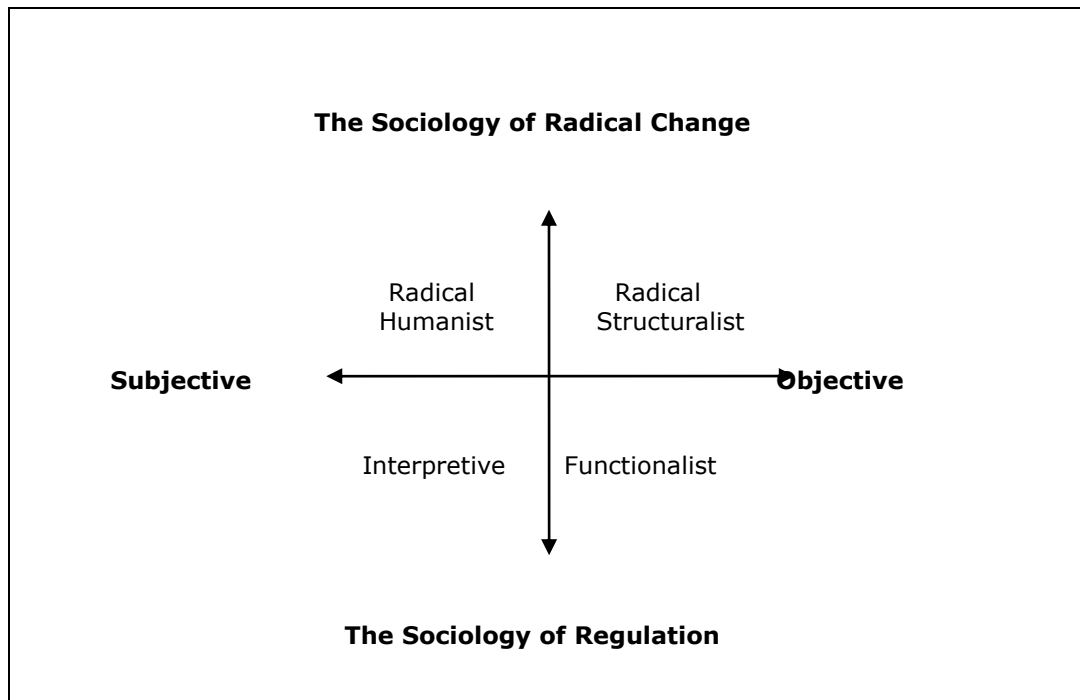
personal beliefs (Hopper and Powell, 1985). Collectively the assumptions are referred to as a "paradigm" (Lawal, 2008).

A paradigm is defined as "the basic way of perceiving, thinking, valuing and doing associated with a particular vision of reality" (Harmon, 1970:5). A paradigm is also described as set of rules and regulations, written or unwritten, which establishes or defines boundaries and dictates how the researcher behaves inside the boundaries (Baker, 1992). In other words, a paradigm, according to Bailey (1978), is like a mental window through which the researcher views the social world out there based on his or her paradigm of concepts, categories, assumptions and biases.

There are quite a number of frameworks that have been developed in an attempt to define paradigm in social and organisational theory. However, that of Burrell and Morgan (1979) has attracted substantial attention (White, 1983) and retains widespread acceptance across many areas of management and sociological literature (Lowe, 2001).

Burrell and Morgan (1979) developed a framework that fits all views within social sciences into four sociological paradigms, namely; functionalist, interpretive, radical humanist, and radical structuralist. These paradigms are based on the relationships between two dimensions - subjective-objective dimension and regulation-radical change dimension (see Figure 5.1) - and are the "very basic meta-theoretical assumptions, which underwrite the frame of reference, mode of theorising and modus operandi of the social theorists who operate within them" (Burrell and Morgan, 1979:23).

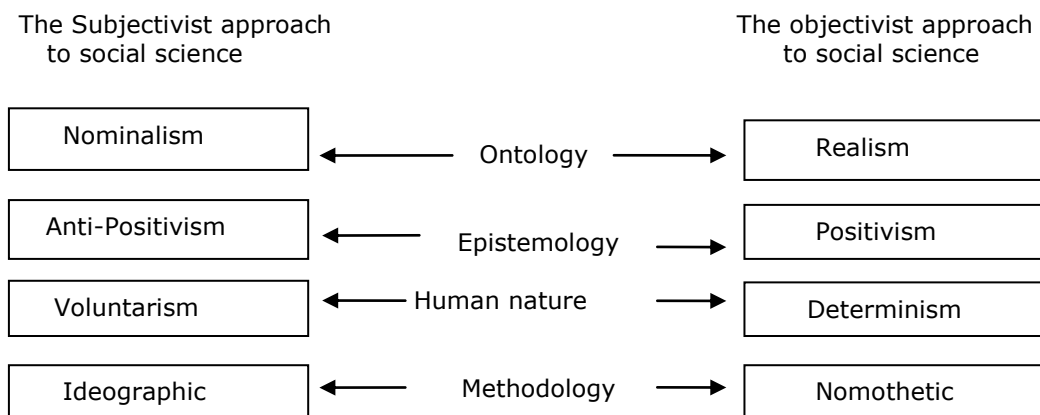
Figure 5.1: Sociological Research Paradigms



Source: Burrell and Morgan, 1979

The subjective-objective dimension is divided into four underlying assumptions of researchers relating to; ontology, epistemology, human nature, and methodology (see Figure 5.2). In each case, these four assumptions can be subjective or objective.

Figure 5.2: Subjective-objective approach to social science



Source: Burrell and Morgan, 1979

Ontological questions deal with the nature of reality, whether it is an objective nature external to the individual or it is a cognitive construction within one's mind (Burrell and Morgan, 1979). Related to ontology is epistemology, which relates to investigation of the very essence of knowledge, its nature and forms. It entails whether knowledge is hard, real, and capable of being transmitted in tangible form or whether the foundation of knowledge is personal, more subjective and of a transcendental type (Burrell and Morgan, 1979). Assumption about human nature reflects the relationship between human beings and their environments. Burrell and Morgan (1979:2) understood this relationship as whether "human beings and their experience are regarded as products of environment" or "man is regarded as creator of his environment". Methodological assumption relates to method used to investigate knowledge about the social world. A researcher's choice of methodology depends on the ontological, epistemological, and human nature assumptions he/she holds (Burrell and Morgan, 1979). If the social world is viewed hard and external, just like in the natural sciences, then nomothetic methodology applies and if, on the other hand, is viewed soft and more subjective, then an ideographic methodological approach is emphasised (Burrell and Morgan, 1979).

The regulation-radical change dimension consists of assumptions about the nature of society (see Table 5.1). From the regulation perspective, the assumptions are that the social world is stable, cohesive and integrated with underlying unity. Emphasis is on consensus between human beings and the satisfaction of needs. The society's status quo is always maintained or at worse changes slowly with no room for conflicts

and differences. Assumptions from the radical point of view are that the social world is unstable and divided, with deep-rooted structural conflict and modes of domination. Emphasis here is on the unstable nature of interaction or structure that leads to new structure. The status quo changes very rapidly and the forces that changes the society are largely present.

Table 5.1: Regulation-Radical Change Dimension

The sociology of REGULATION is concerned with:	The sociology of RADICAL CHANGE is concerned with:
a) The status quo b) Social order c) Consensus (voluntary agreement) d) Social integration and cohesion e) Solidarity f) Need satisfaction (aligning social and individual needs) g) Actuality	a) Radical change b) Structural conflict c) Modes of domination d) Contradiction e) Emancipation f) Deprivation (the social need erodes individual fulfilment) g) Potentiality

Source: Burrell and Morgan, 1979

These two dimensions, as noted earlier, helped Burrell and Morgan (1979) to come up with four contiguous but mutually exclusive paradigms: functionalist, interpretive, radical humanist, and radical structuralist. The functionalist paradigm stands for the believe that “the social world is composed of relatively concrete artefacts and relationship which can be identified, studied and measured through approaches derived from natural science” (Burrell and Morgan, 1979:25). This paradigm takes a realist ontological position and combines it a positivist approach to epistemology, deterministic position as regards human nature, and a nomothetic methodology.

Just like the functionalist, the interpretive paradigm is also within the ambit of the sociology of regulation. In contrast, however, the

interpretive paradigm views "the social world as emergent social process which is created by individuals concerned" (Burrell and Morgan, 1979:28). It assumes nominalist ontology, anti-positivist epistemology, voluntarist view of human nature, and an ideographic methodology.

While the radical structuralist and humanist paradigms respectively assume all the philosophical assumptions underpinning the functionalist and interpretive paradigms, they, however, substitute the consensual societal view of the functionalist and interpretive paradigms with a conflicting one. Emphasis is on emancipatory agenda, in which research is geared towards freeing people from forces that restrict their potential for growth and development. This, according to Burrell and Morgan (1979), can be achieved through conflict and change.

Although, the Burrell and Morgan's (1979) framework is widely accepted across many areas of management and sociological literature, it has nevertheless been criticised by some commentators. For example, Flood (1990) and Jackson (1991) argue that that the framework does not provide a complete taxonomy of all possible theoretical positions. Alvesson and Deetz (1996), on the other hand, challenge that the subjective-objective dimension implicitly sides the functionalist view by hiding the subjective nature of the underpinning assumptions in objectivist ontology. Other scholars criticised the framework on two related areas: 1) it is too simplistic way of showing a division between different methodologies in a matrix and 2) its tendency to preserve and strengthen paradigm incommensurability (see Hopper and Powell, 1985; Willmott, 1993).

Notwithstanding the criticisms above, the Burrell and Morgan (1979) framework has become foundation for many frameworks for empirical research in social science (see Chua, 1986). From accounting perspective, researchers, such as Tomkins and Groves (1983), Hopper and Powell (1985), Chua (1988), Laughlin (1995) and Ryan et al (2002) have explored alternative accounting research paradigms. The main approaches can be classified as mainstream, interpretive, and critical. Although this sociologically divided trichotomy is originally developed to differentiate management accounting, it remains useful for accounting research (Fulbier and Sellhorn, 2008).

The mainstream accounting research is consistent with what Burrell and Morgan (1979) refer to as functionalism (Ryan et al, 2002) and comprises of research approaches such as objectivism, social systems theory, and pluralism (Hopper and Powell, 1985). It is also categorised as comprising of the positivist, realist, instrumentalist, and conventionalist research approaches all in the same group as functionalism (Laughlin, 1995). This approach assumes that reality is external and can be observed and economic actors are assumed to be goal oriented utility maximisers. With this approach, generalisation and causal relationships is very important, thus, making the use of statistical research methods almost exclusive. One of the consequences of the assumptions underpinning this research approach is that accounting researchers take current institutional framework of governments, markets, and prices as given in their natural setting (Chua, 1886). Thus, it is not the purpose of mainstream accounting to make an attempt to evaluate and perhaps change an institutional structure. The accountant

takes a neutral position by not evaluating these end-states. The primary role of the accountant, Chua (1986) noted, is the provision of financial information on the means to achieve these states.

The interpretive methodological approach, on the other hand, is a product of "Germanic philosophical interests which emphasizes the role of language, interpretation, and understanding in social science" (Chua, 1986:613). It provides an insight into "the complex world of lived experience from the point of view of those who live it" (Schwandt, 1994:118). Interpretive research assumes reality as socially constructed with the researcher becoming the vehicle through which the reality is revealed (Walsham, 1995). The creation of the social world is characterised by interaction between the researcher and the participants (Mingers, 2001). Thus, interpretive researchers, Orlikowski and Baroudi (1991) noted, attempt to understand phenomena through accessing meanings participants assign to them. Researcher's interpretations of data play vital role in interpretive research as it brings "subjectivity to the fore, backed with quality arguments rather than statistical exactness" (Garcia and Quek, 1997:459). Methodological approaches such as symbolic interactionism, grounded theory, and ethnomethodology all fall within this approach (Laughlin, 1995; Parker and Roffey, 1997).

Critical accounting research has its root from the history of critical disciplines which question the pre-eminence of the dominant social view that society is forever fluid and any pretensions of stability in social dynamics are mere illusion (Tilling and Tilt, 2003). Critical accounting

theory has two broad aspects that distinguished it from the mainstream and interpretive theories.

First is the contextualisation of accounting practice within a wider domain which Laughlin (1987:479) put as thus:

“While it is acknowledged that a great deal is known about the technical aspects of accounting, it is argued that little is understood about either accounting’s social roots or the interconnection and interrelationship between the social and the technical”

Part of the reason for this contextualisation is the recognition that accounting is not science but a human endeavour (Francis, 1990). The second aspect is the call for the transformation of the whole system. In this context, Laughlin (1987:482) holds the view that “the present is not satisfactory, that reality could be better than it is”. This call for the transformation of the whole system, according to Tinker (1988), is what clearly distinguishes critical accounting from the positivist approach.

For the purpose of this study, the interpretive paradigm consistent with the Burrell and Morgan (1979) framework is adopted. This is in line with the argument by many scholars that the adoption of a particular research paradigm by a researcher is a requirement for the achievement of his/her research objectives. For example, Guba and Lincoln (1994:116) argued thus:

“Paradigm issues are crucial; no inquirer, we maintain, ought to go about the business of inquiry without being clear about just what paradigm informs and guide his or her approach”.

The Burrell and Morgan (1979) interpretive paradigm, as noted earlier, has nominalism, anti-positivism and voluntarism as ontological,

epistemological and human nature assumptions which lead to the adoption of an ideographic methodology. Adoption of nominalism as an ontological assumption is justified because the knowledge of the appropriateness of a petroleum tax regime based on a nation's circumstances and needs is based on the cognitive construction within ones' mind.

Similarly, this research is about examining the perception people have on whether the Nigerian petroleum tax system is designed in line with the country's circumstances and needs. This conforms to Burrell and Morgan's (1979) anti-positive epistemology which argues that the social world is relativistic by nature and can only be understood from the viewpoint of those concerned in studied activities.

The voluntarism assumption for human nature is used for this study. This choice of the voluntarists' position of human nature is informed by belief that human beings are the result of their free wills. This is consistent with interpretivists' view that the social world is an "emergent social process which is created by individuals concerned" (Burrell and Morgan, 1979:28). Thus, in the context of this research, the behaviours of individuals are not defined and influenced by the situation or environment under which tax is design and implemented.

The choice of nominalism, anti-positivism and voluntarism as ontological, epistemological and human nature assumptions led to the adoption of an ideographic methodology, thus positioning the study within the ambit of an interpretive paradigm consistent with the Burrell and Morgan (1979) framework.

Regarding the idea of “regulation” and “radical change” as put forward by Burrell and Morgan (1979), this study, just like any other interpretivist approach, is closely inclined to regulation rather than radical change. However, as a result of the apparent weaknesses of the Burrell and Morgan (1979) framework, as earlier noted, this research adopted the “middle range” thinking advocated by Laughlin (1995) as it shows openness to both radical change and maintenance of status-quo. In the words of Gray et al (1988:8), the middle range thinking is a study “... in which the status-quo is accepted (although variously interpreted) and explicit, and overt ambition is neither to destroy capitalism nor to refine, deregulate and/or liberate it”.

5.3 Formulation of hypotheses

Formulation of hypotheses in a research project is a fundamental requirement for an effective execution of the research work. In the words of Kpolovie (2011:38): “an empirical research cannot be considered to have been well executed without hypothesis”. Accordingly, in order to determine whether the Nigerian petroleum tax system is appropriately designed to meet the needs of Nigeria, six hypotheses, indicated by H1₁ to H1₆, were formulated for this study. Each of the hypotheses is operationalised using a number of applicable statements which were tested in the order in which they contribute to the attainment of the study’s objectives to which the hypothesis relates.

H1₁: Nigeria's petroleum tax system is a fair representation of the interests of the government and the MOCs.

The broad objective of a petroleum tax system, as discussed in Section 2.4.2, is to strike a balance between the interest of the government and that of the investors (MOCs). However, since there are no universal benchmarks designed for balancing the interests of contracting parties (Radon, 2009), governments and MOCs necessarily negotiate arrangements that ostensibly allow the host government to come up with petroleum tax objectives that fairly capture the interests of all parties.

In Nigeria, over the years compromises have been made by both the government and the MOCs. The government, for example, in response to the oil glut of the 1980s, signed an MOU with the MOCs providing, among other things: the replacement of posted price with market price of crude oil, a guaranteed minimum margin of \$2.00 for crude oil prices of less than \$12.50/bbl and a reserve bonus on successful discoveries. The effect of all these, according to Khan (1994), was a reduction in tax paid by the MOCs. Similarly, the MOCs, in line with the indigenisation policy of the Nigerian government, were compelled to gradually surrender an average of 60% of the JV holdings to the government.

Given that compromises have been made it seems reasonable to investigate if the taxation system in place fairly represents the interests of the MOCs and the Government.

This hypothesis is tested through five different but related objectives of the Nigerian petroleum tax system in the following order: i) equity in the distribution of oil revenue between the government and the MOCs; ii)

yearly increase in government petroleum revenue; iii) influence of tax incentives on MOCs investment decisions; iv) distribution of tax revenue among the tiers of government in Nigeria; and v) incentives for enhancing the international competitiveness of the Nigerian petroleum tax system.

H1₂: Nigeria's petroleum tax instruments are suitable for achieving the objectives set for the petroleum tax system.

Governments across oil producing nations apply a wide range of tax instruments in order to meet the objectives set for their petroleum tax systems (Goldsworthy and Zakharova, 2010). What matters, therefore, is not the number of instruments but the ability of each of the instruments to meet the set objectives of the tax system.

Nigeria, just like any other oil producing nation, employs a combination of tax and non-tax instruments in order to meet the nation's petroleum tax objectives. The main instruments are: i) bonuses and fees; ii) royalty; iii) income tax; iv) participation; and v) production sharing. It seems appropriate to assess whether or not those "experts" in the area view these instruments as being suitable for achieving the objectives set for the petroleum tax system.

H1₃: Nigeria has in place a sound administrative system for petroleum tax matters

The efficiency of a tax system, according to Bejakovic (2000), is not only determined by proper tax legislation but also by the effectiveness of the tax administration. A tax system cannot function better than its tax

administration (Jenkins, 1992). This underscores the importance of a sound tax administrative system in most countries.

Nigeria, being heavily dependent on crude oil revenue, needs not only a good petroleum tax policy but also a well-organized administrative system for petroleum tax matters that is comprehensive, flexible and cost effective. It is for these reasons that it seems appropriate to test the above hypothesis.

H1₄: The implementation processes for Nigeria's petroleum tax system are effective

As earlier noted, the worth of a tax system depends on how effective it is implemented. A poorly administered resource tax system, Calder (2010a) noted, has the potential of causing great damage to government revenues, reputation and policies. In order to be effective in implementation, the Nigerian government has put in place several measures, including: training and development of tax officials and maintenance and financing of multiple petroleum tax administrative agencies. This hypothesis is developed to test the effectiveness of these measures in ensuring successful implementation of the Nigerian petroleum tax system.

The hypothesis is tested via: i) government support for effective administration of petroleum tax system; ii) adequacy in the finance of Nigeria petroleum tax agencies; iii) possession of required features by Nigerian petroleum tax administrative agencies for ensuring successful administration; and iv) relationship and capacity of Nigeria's petroleum tax administrative agencies.

H1₅: The compliance mechanisms relating to the Nigerian petroleum tax system are adequate.

Tax evasion is a problem that has the potential of undermining government budgets, damaging public welfare and creating a sense of unfairness that may lead to further evasion (Luis et al, 2006). Accordingly, governments, particularly of oil producing nations, have compliance mechanisms for the detection of tax evasion built into their tax system. Nigeria, as discussed in Chapter 3, has defined petroleum tax regulations that make provisions for review. Similarly, various tax policies for fast payment of petroleum taxes, including self-assessment system, monthly instalment payment of tax liabilities and penalties for late payments, were built into the tax system. Testing the above hypothesis should give insights into the effectiveness of these compliance mechanisms.

Three statements were used for testing this hypothesis: i) main attributes of the Nigerian petroleum tax system; ii) features designed to assist petroleum tax compliance; and iii) policies for fast payment of petroleum taxes.

H1₆: The Nigerian petroleum tax system is reactive to changes in factors that significantly affect tax matters

A country's petroleum tax system is affected by both global and local factors that may prevent the country's tax objectives being met. In view of that, governments provide for some allowances while designing their tax systems such that their system can react appropriately to any changes that occur. The Nigerian petroleum sector has been perceived to

be out of tune with the current realities of Nigeria and indeed with the best practices obtained in the global petroleum industry (Oyesina, 2010). The realisation of this informed the government to draft a bill which it calls "the Petroleum Industry Bill" proposing amendments to the existing system. The bill is currently receiving attention of the National Assembly. Testing the above hypothesis should shed light on the appropriateness of the tax system in enabling the government to react to changes in factors that significantly affect tax matters.

In a similar way, this hypothesis is tested via five statements relating to the tax system : i) capacity to adjust to changes in tax regulations in other countries and increase in MOCs' risk of making a loss; ii) adjust government share of petroleum revenue for changes in the profitability of the MOCs; iii) control mechanism for detection of fraudulent practices and underreporting of production; iv) ability to cope with MOCs fear and public concerns; and v) government reaction to requests for greater share of oil rent and compensations for environmental damages by communities in the oil region.

5.4 Research Methods

There are traditionally two broad classifications of research methods, viz; quantitative and qualitative research methods. In recent years, however, a third classification variously called mixed-methods (Creswell, 2003), multi-methods (Brannen, 1992), multi-strategy (Bryman, 2004), or mixed-methodology (Tashakkori and Teddlie, 1998) is introduced to the research literature.

Quantitative research involves counting and measuring of events as well as performing statistical analysis of numerical data (Smith, 1988). It is scientific in nature, and tends to be employed when a theory is already well developed and is just being confirmed. It is best used in 'objective' studies. The goal of quantitative research is to measure and analyse casual relationships between variables within a value-free framework (Denzin and Lincoln, 1994). Quantitative research, Carey (1993) noted, uses much larger sample size than qualitative research in order to ensure that representative samples are used. Various techniques, including randomisation, highly structured protocols, and written or oral questionnaires, are used to ensure the attainment of this goal.

Qualitative research, on the other hand, is a naturalistic approach that seeks to understand phenomena in context-specific settings, such as "real world setting where the researcher does not attempt to manipulate the phenomenon of interest" (Patton, 2001:39). It is, defined by Patton (2001:39) as "the kind of research that produces findings arrived from real-world settings where the phenomenon of interest unfolds naturally". In the words of Shank (2002:5)³⁸, qualitative research is simply "a form of systematic empirical inquiry into meaning". Qualitative research has the goal of understanding a social or human problem from multiple perspectives. To achieve this goal, it is conducted in natural settings and involves a process of building a complex and holistic image of the event

³⁸ Qualitative research is systematic, according to Shank (2002), because it is planned and follows the rules agreed upon by members of the qualitative research community. Shank, (2002) refers to qualitative research as empirical because it is an inquiry that is grounded in the world of experience. By inquiry into meaning, Shank (2002) means researchers try to understand how others make sense of their experience.

of interest. Qualitative research methods involve interviews and observations. It also includes surveys, case studies, and document analysis, among others.

Mixed-method research is defined "as the class of research where the researcher mixes or combines quantitative and qualitative research techniques, methods, approaches, concepts or language into a single study" (Johnson and Onwuegbuzie, 2004:17). Justifying the position of mixed research, Huberman (1994:4) acknowledge that:

"In epistemological debates it is tempting to operate at the poles. But in the actual practice of empirical research, we believe that all of us are closer to the centre with multiple overlaps" an increasing number of researchers now see the world with more pragmatic, ecumenical eyes"

While there are a number of reasons for combining the two paradigms³⁹, the literature has identified only two legitimate reasons which, according to Sale et al (2002), are: first, to achieve cross-validation or triangulation⁴⁰ and second, to achieve complementary outcomes by using the strength of one method to enhance the other.

The emphasis in this research is on the use of the qualitative research method because it is based on the perception of people on the factors that govern the operation of petroleum taxation in Nigeria. In addition,

³⁹ There are several reasons for the combination of the two approaches which include: First, the two approaches share the common goal of understanding the world in which we live (Haase and Myers, 1988). Second, both approaches have the commitment to understanding and improving human condition, have the common goal of disseminating knowledge for practical use, and the same commitment for rigor, conscientiousness, and critique in research methodology (Reichardt and Rallis, 1994). Third, the need for researchers not to be preoccupied with the quantitative-qualitative debate since it will not be resolved in the near future and the fact that epistemological purity does not guarantee research (Miles and Huberman, 1984).

⁴⁰ Cross-validation or triangulation, according to Denzin (1970), refers to the combination of two or more theories or data sources to study the same phenomenon in order to gain a complete understanding of it.

since the findings of this study may not be generalisable across oil producing nations due to the fact that each jurisdiction has its own circumstances that may differ from the others, the emphasis on qualitative research whose underpinning principle is non-generalisation of findings seems appropriate.

5.4.1 Population of the study

A population simply refers to any set of persons or objects that have at least one characteristic in common (Basha and Harter, 1980). It is also defined as "entire group of people, events, or things of interest that the researcher wishes to investigate" (Sekaran, 2001:225). The knowledge of a population at the outset of a study is crucial in identifying the proper sources from which data for the study can be collected (Zikmund, 2001). As a result, 10 legitimate stakeholder groups were selected for the study (see Table 5.2)⁴¹. With the exception of Higher Institution of Learning (HIL), each of the nine other groups maintains an Oil and Gas Department and on average there was a total of 25 staff manning the Department (Table 5.2). In the case of HIL, there were, on average, 3

⁴¹ There are other stakeholders that were not surveyed in this study for at least two reasons. First, some of the stakeholders were duly represented by the institutions surveyed. For example, the states, local governments, and oil communities are represented by the National Assembly. Each state in Nigeria is represented by three senators and some house of representative members who are elected by the people to speak on their behalf at the NASS on issues that affect the nation and their related communities (Nigerian constitution, 1999). The states and local governments were also represented by the AGF. The AGF, through the Federation Account Allocation Committee (FAAC), meets, on a monthly basis, with the representative of all the states and local governments in Nigeria and disburse the revenue that accrues to the federation among the three tiers of government. Second, the views of some other stakeholders were not thought to be important in meeting the objectives of the study. For example, because of the unincorporated status of the MOCs operating in Nigeria, the views of international accounting firms were not sought. But on reflection, the study was of the view that they should have been sampled because they represent one of the groups of experts on petroleum taxation.

petroleum accounting lecturers in 8 Universities in Nigeria that offer petroleum accounting.

Table 5.2: Estimation of population of the “expert” groups⁴²

Groups of “experts”	Population
Nigerian National Petroleum Corporation	28
Federal Inland Revenue Service	32
Central of Bank of Nigeria	23
Ministry of Petroleum Resources	27
Multinational Oil Companies	24
Accountant General’s office	24
Auditor General’s office	29
Nigeria Extractive Industries Transparency Initiative	4
National Assembly	31
Higher Institution of Learning	24
Total	246
Average (figure rounded to the nearest whole number)	25

Source: Based on pilot study

In order to be satisfied that the identified stakeholders have the appropriate knowledge of the petroleum tax system in Nigeria, every effort was made to seek assurances and advice from a range of individuals in positions of authority in Nigeria’s oil and gas taxation sector⁴³. On the basis of the input they provided and by subsequent interrogation of the available information of the groups selected, there are reasonable grounds to support the view that the experts do have the requisite knowledge.

It is also noteworthy that these groups of experts have different goals and objectives that they want to achieve from the revenue obtained from the petroleum tax system in Nigeria. These vested interests of the

⁴² These estimates were arrived at during the pilot study in Nigeria and represent the total number of staff with expertise in upstream petroleum accounting matters in the respective Oil and Gas departments of the stakeholders groups.

⁴³ The first step taken was to identify persons in position of authority in the Nigerian oil sector. This was achieved through the help of contacts who were either employees or close associates of the persons identified. The researcher then met with those persons and sought their assurances and advice on whether the experts selected for the study really have the appropriate knowledge of the petroleum tax system in Nigeria. Some gave their assurances outright while others took about a week.

experts in the tax system arguably influence not only the behaviour in how they respond to the various suggestions in the research questionnaire but also their input to the design and operation of the system.

The paragraphs below discuss the interests of the expert groups and their likely responses to the study questionnaire.

1. The Nigerian National Petroleum Corporation (NNPC) principally manages the interests of the government in the oil and gas industry (Nwokeji, 2007). In so doing, it engages in all activities that would improve the petroleum industry in the general interest of Nigeria. In addition, it works closely with the MOCs in exploiting opportunities within the oil and gas sector in Nigeria. As such, the NNPC might be expected to respond positively to some statements that suggest interaction with the MOCs has gone well and to those that reflect well on the investment friendly nature and competitiveness of the Nigerian petroleum tax system. The media and literature suggest strongly that there is general dissatisfaction with the amount of revenue that the Nigerian oil and gas sector has produced for the government and society (see Ogbonna, 2012; Asuni, 2009). Unfortunately for the NNPC a large share of the blame for this situation has been ascribed to the operational ineffectiveness of the NNPC (Izeze, 2012). There is a distinct possibility that in responding to statements about the performance of other parts of the oil and gas sector in Nigeria that the NNPC may try to deflect attention away from any perceived faults it may have by commenting negatively on that performance.

2. The Federal Inland Revenue Service (FIRS) is Nigeria's main tax institution. It is empowered by Section 8 of the FIRS Act (2007) to assess, collect, account and enforce payment of all taxes due to the government from all the MOCs operating in Nigeria. The FIRS, therefore, ensures that the MOCs not only pay their tax liabilities when due but also comply with all tax regulations. Accordingly, the FIRS might be expected to respond positively to statements relating to the efficacy of tax policies, administration and compliance.

3. The Central Bank Nigeria (CBN) and Ministry of Petroleum Resources (MPR) are among agencies responsible for the administration of petroleum taxation in Nigeria. These agencies might, therefore, be likely to agree with statements that suggest the effectiveness of the tax implementation processes and compliance mechanisms.

4. The Multinational oil companies (MOCs) are among the major players in the Nigerian oil sector. They account for over 90% of the nation's petroleum taxes. Their main objective is to ensure that their interests are adequately captured in the tax system. Consequently, in the hope that more attractive terms may be set in the future, there may be an inclination for them to disagree with statements that overtly suggest that the taxation system is attractive to investors. Such views are supported in the literature. For example, Otto et al. state "companies rarely believe that they pay too little tax" (Otto et al., 2006: Xi) and thus it is likely that the MOCs might disagree with statements that support the appropriateness of the Nigerian petroleum tax system in capturing their interests.

5. The Accountant General's office (AGF) is responsible for accounting and control of all government finances (Nigerian Constitution, 1999). It therefore presumably has a vested interest in cultivating the view that such control in the past has been well exercised since that should reflect well on the way the AGF has performed its duties. The AGF distributes, on a monthly basis, the revenue accruing to the federation among the three tiers of government. Hence, it might be positive in responding to statements that suggest fairness in revenue distribution and effectiveness in exploitation and use of oil revenues.

6. The Auditor General's office (AGO) is responsible for auditing the accounts of all ministries, boards, and parastatals including the agencies responsible for the administration of petroleum taxation. In many ways the expectation for this group is that it will mirror the opinions of the Accountant General's Office with respect to statements on petroleum taxation issues since both groups have a responsibility for ensuring that control systems operate effectively within the petroleum taxation area.

7. The Nigerian Extractive Industry Transparency Initiative (NEITI) is the nation's EITI wing that audits all tax revenues paid to the government by the MOCs and publishes same. The activities of NEITI have, arguably, been largely responsible for Nigeria achieving the status of being EITI compliant (Onwuemenyi, 2011). Consequently, it would be surprising if this group did not respond positively to statements that supported the success of the processes at play within the petroleum taxation system in Nigeria.

8. The National Assembly (NASS) is responsible for making laws in Nigeria and it is actively engaged, through its oil and gas committee, in ensuring that laws relating to the oil petroleum industry are up-to-date. It is a political group of influential actors within the petroleum industry in Nigeria. In common with politicians worldwide, when there are perceived inefficiencies within the operational side of an area of economic importance they are likely to receive a share of the blame in the media (for example DailyPost, 2012) In line with the comments above relating to the NNPC, this group might respond negatively to the effectiveness of the performance of other groups.

9. Lecturers⁴⁴ from Higher Institutions of Learning (HIL) with expertise in petroleum taxation affairs will have a sound theoretical knowledge of the issues involved in setting policy and assuring competitiveness of the system. They will also be acutely aware that funding for their institutions is heavily dependent on government patronage and on the petroleum industry being seen to be a success story (Akikungbe, 2001). It is uncertain how they might respond to the statements but the overall tendency is likely to react positively to them.

5.4.2 Sample and sampling technique

A sample in the words of Webster (1985:1100) is "a finite part of a statistical population whose properties are studied to gain information

⁴⁴ Lecturers from universities in Nigeria form part of the population of this study because some universities in Nigeria offer petroleum accounting courses that cover all aspects of accounting. The lecturers teach petroleum accounting and also perform academic oversight functions. They also partake in the review of accounting curriculum in line with developments in the oil sector. Thus, for this study the lecturers that formed the population were purely those from the 8 universities in Nigeria that offer petroleum accounting.

about the whole". In relation to qualitative research, there are no hard and fast rules for the determination of sample size (Patton, 2002). The size of a sample in a qualitative research exercise, as noted by Patton (2002), depends on certain factors which include: what the researcher wants; the purpose of the research; what is at stake; what will be useful; what will affect the credibility of the research; and what can be done with the available time and resources.

A researcher, after considering the above factors identified by Patton (2002), may use his/her judgement to decide on a suitable number of respondents for his/her study as Sandelowski (1995:179) rightly put thus:

"Determining adequate sample size in qualitative research is ultimately a matter of judgment and experience in evaluating the quality of the information collected against the uses to which it will be put..."

On the basis of the argument above, 15 respondents were judgementally sampled across the stakeholder groups.⁴⁵ The decision to sample 15 respondents evenly across the respondents' groups is justified because there was no remarkable difference in the populations of the groups. As can be seen from Table 5.2, only one population group could be considered to be an outlier⁴⁶. All the populations were close to each other and approximate to the average population of the entire groups. Similarly, sampling 15 respondents out of an average of 25 translates to about 60% of the entire study population being surveyed. Thus the

⁴⁵ The case of NEITI is an exception because the institution had only 4 upstream petroleum accounting experts as at the time when the survey was conducted.

⁴⁶ An outlier is an item of data that is numerically distant from the rest of the data set (the data in this case are individual populations).

evidence suggests that the sample is a good representation of the population.

On the other hand, judgemental⁴⁷ sampling was used in this study for two main reasons. First, it is the method that dominates the research literature that utilises the qualitative approach and the selection of the most productive sample to answer research questions (Marshall, 1996). Second, the sampling technique allows the selection of the sample elements with extreme precision making it easier to guarantee respect for criteria such as homogeneity (Thietart, 2001).

5.4.3 Method of Data Collection used in the study

There are many different methods for collecting data with each having its strengths and weaknesses. The type of data collection method researchers choose depends on some complex factors as Floyd and Fowler (2002:58) states:

“The choice of data collection mode – mail, internet, personal interview or group administration – is related to the sample frame, research topic, characteristics of the sample and available staff and facilities; it has implications for response rates, question form and survey costs”.

Apart from the factors listed by Floyd and Fowler (2002) above, there are, of course, some other obvious factors that affect the choice of data collection method. These include: availability of time for data collection, money budgeted, and the nature of questions to be asked.

⁴⁷ The other two techniques, according to Marshall (1996), are 1) convenience sampling which involves the selection of the most accessible subjects. It is the least costly but gives poor results and lacks intellectual credibility and 2) theoretical sampling which is theory driven and necessitates building of interpretive theories from the data that emerged and then selecting a new sample to examine and elaborate on this theory.

With these factors in mind, a researcher adopts a method or a combination of methods for his or her research. These methods include questionnaire and interview.

A questionnaire is defined as "a document containing questions and other types of items designed to solicit information appropriate to analysis" (Babbie, 1990:377) It is considered one of the most widely used data collection methods because, as respondents are asked to answer the same set of questions, it serves as an efficient response collection method from a large sample (Saunders et al, 2003). Depending on the objectives of the data collection exercise, a questionnaire survey, as suggested by Dillman (1978), may be used to collect one or more of the following types of information: (i) the attributes of people such as personal characteristics in terms of age, marital status, educational background, and occupation, (ii) Behaviour and events - what people do, for example, the frequency of people engaging in risky behaviours such as smoking or consumption of alcohol, (iii) Peoples' believes and/or knowledge - what people think is true in which Dillman (1978) noted that there is no implied judgement about what is good or bad, (iv) attitudes or opinions or reasons - what people say they want or "how people feel about something".

While a questionnaire is designed to gather the types of information identified above, its effectiveness in gathering such information depends on the researcher's observance of certain design guidelines or principles. These guidelines, according to Malhotra (2004), include; specification of information needed, what should be included in each question, the types

of questions to be asked, number of questions to ask, ability of the respondents to answer the questions, willingness of respondents to answer question, and what should be the structure of the question.

A questionnaire can either be structured, semi-structured, or unstructured. A structured questionnaire consists of pre-coded questions with well defined patterns to follow the sequence of questions. Most qualitative data collection activities, according to Acharya (2010), use structured questionnaire. Structured questionnaire has the advantage of being easy to administer, consistency in answers and easy for data management. Unstructured questionnaire, on the other hand, consist of open ended and vague opinion type questions which, Acharya (2010) noted, may not be in the format of interrogative sentences, and therefore, the moderator has to elaborate the sense of the questions. Unstructured questionnaire is most appropriate for focus group discussions. A questionnaire having the mixture of both closed and open questions is levelled semi-structured or otherwise quasi-structured questionnaire. The use of semi-structured questionnaire enables a researcher to gather a mix of qualitative and quantitative data.

Just like questionnaires, interviews are widely used as data collection instrument throughout social sciences (Nunkoosing, 2005). It is defined by Cohen and Manion (1994:271) as:

“a two-person conversation initiated by the interviewer for the specific purpose of obtaining research-relevant information, and focused by him or her on content specified by research objectives of systematic description, prediction, or explanation”.

Interviews are very useful, particularly for getting the story behind participants' experiences. The interviewer, according to McNamara (1999), can pursue in-depth information around the topic and can be useful as follow-up to certain respondents to questionnaires with a view to investigate their responses. Although research objectives govern the questions asked in interviews, the content, sequence, and wording of interviews are entirely in the hands of the interviewer (Kerlinger, 1970).

Interviews, according to Fontana and Frey (2005), can be divided into three categories, viz: structured interviews, semi-structured interviews, and unstructured interviews. A structured interview is one that has a set of predefined questions and the questions would be asked in the same order for all the respondents. This standardisation is aimed at minimising the possible effects of the questionnaire and the interviewer on the result of the research.

Semi-structured interview is relatively more flexible than structured interview, and it consists of both closed-ended and open-ended questions. In a semi-structured interview the interviewer has the freedom, during the course of the interview, to adjust the sequence of the questions to be asked and to add questions based on the context of the participants' responses.

Unstructured interview is an interview in which neither the questions nor the answer categories are predetermined, rather the interview rely on social interaction between the researcher and the informant (Minichiello et al, 1990). The objective of an unstructured interview is to expose the researcher to unanticipated themes and thus help him or her to develop

a good understanding of the interviewees' social reality from the interviewees' points of view.

As earlier stated in Section 1.6, this research employed a questionnaire as the only method of data collection. The use of questionnaire as the only research instrument in this study can be justified for two main reasons. First, the desire to triangulate⁴⁸ using questionnaire and interview could not be achieved because none of the respondents would agree to be interviewed. They claimed that petroleum taxation was a sensitive issue in Nigeria⁴⁹ and any attempt to grant interview might cause them their jobs and even their lives. Thus, after several efforts to persuade them to change their minds had failed, it was understood that any further attempt to get the respondents interviewed might result in them responding to the questionnaire in a biased manner and hence the proposed use of an interview was dropped. Consequently, there has been a trade off between trying to ensure that undue pressure has not been applied to the respondents that may influence their responses, and seeking secondary confirmation of the validity of the responses. In addition, the study attempted to identify and minimise processes that might impact adversely on the reliability and validity of the data used in the analysis (see Section 5.4.3.3). Second, and more importantly, a questionnaire offers an objective means of gathering information concerning people's knowledge, beliefs, attitudes, and behaviours

⁴⁸ Triangulation is a term use to describe the use of a combination of methods in a research (Sarantakos, 1998)

⁴⁹ Part of the reason that made the respondents believe that petroleum taxation was a sensitive issue in Nigeria was because of the vested interests of very powerful people in the country in the oil sector (Gboyega et al., 2011). These people are well rooted in the executive, petroleum ministry, and the national assembly (Waddilove, 2012) making it difficult for experts in the industry to express their views.

(Oppenheim, 1992). This has served the study's aim of examining the perceptions that different groups have on whether the Nigerian petroleum tax system is designed in line with the country's circumstances and needs. While the study is aware of the limitations of using a perception question as a basis for accepting or rejecting hypotheses, the approach has been persevered with because it was the role that the selected groups of "experts" have in the design and operation of the tax system that is important. And one way of assessing their likely influence is to find out how they view what had happened to revenue collection and its administration. This insight into the propensity of the experts to have preconceived views on certain issues will affect the meaning and understanding attached to each and every variable investigated. In this way, using a perception questionnaire enables tentative conclusions to be drawn about the hypotheses and also allows fair conclusions to be drawn about the interplay between these experts.

The processes involved in the design, piloting, and administration of the questionnaires are discussed in Sections 5.4.3.1 through 5.4.3.4 that follow.

5.4.3.1 Questionnaire design

The design of a questionnaire affects not only the response rate but also the validity and reliability of the data collected (Saunders et al, 2003). Accordingly, adherence to certain basic principles during the design process is a fundamental requirement for an effective questionnaire design. Oppenheim (1992), for example, suggested that words used in questions should be understandable to all respondents, and not only

that, the intended meaning of those words (i.e. spirit of the words) should be clear to all the respondents. In order to achieve this requirement for this study, a series of meetings was held with my supervisory team. After three months of writing, the wordings in the questions were satisfied to be simple and understandable to all the respondents. This position seems to hold true as none of the respondents complained or asked for clarification of the wordings in the questions.

An effective questionnaire design also demands the aggregation of answers into a battery or composite of scale, such as the Likert Scale and Thurstone scale, in order to ensure that the items used are the most efficient and effective ones that exploit the construct of interest, maximise validity, minimise respondent burden, and minimise the financial costs of data collection (Krosnick, 1999). In this regard, except for the first section, which asked the demographic characteristics of the respondents, and indeed for some very few open-ended questions, this study employed a five point Likert scale (1=strongly agree, 2=agree, 3=neutral, 4=disagree, and 5=strongly disagree). This enabled the respondents to indicate, by ticking the appropriate boxes, the extent to which they agreed or disagreed with statements in the questionnaire.

A clear layout also makes a questionnaire effective (Saunders et al, 2003). In this study, the questionnaire started with an introduction that stated the purpose of the survey and also included instructions for completing the survey. Assurance for the confidentiality of the information provided was also made clear in the introduction (see Appendix C).

The questionnaire was divided into five sections. The first section sought information on the demographic characteristics of the respondents. Respondents were asked three questions in this section regarding their place of work, occupation, and years of working experience. These characteristics were used to examine the differences in opinion among the study's different stakeholders regarding petroleum tax issues covered in the study. Other demographic characteristics, such as age, nationality, and educational background, have not been included in this study because they were not relevant in addressing the research question of the study.

Section two of the questionnaire asked questions on Nigerian petroleum tax objectives and instruments. The aim was to determine whether, in the opinions of the respondents, these tax objectives and instruments were appropriately designed to achieve a balance between the interests of the government and those of the MOCs. Five were asked in all in this section. The first question asked the respondents views on how equitable oil revenue was shared between the government and the MOCs. The impact of tax incentives on MOCs investment decisions was asked in the second question. Question three asked the respondents' opinion as to whether the three tiers of governments in Nigeria were satisfied with the manner in which revenue from petroleum taxation is shared. The international competitiveness and effectiveness of the tax system in capturing appropriate share of oil rent to the government were asked respectively in questions four and five.

The third section asked five questions on issues governing petroleum tax administration in Nigeria. These issues relate to effectiveness of the tax system's administrative plan, government's efforts in ensuring the effectiveness of petroleum tax administration, adequacy of funds for petroleum tax agencies, and the effectiveness of country's tax agencies.

In section four, three questions pertaining to petroleum tax compliance were asked to ascertain whether: i) in the views of the respondents the presence of a clear statement of the purpose of tax regulation and capacity for regular and timely review of the tax regulation have encouraged compliance; ii) database for petroleum taxes paid, adequate numbers of government petroleum taxation experts, and tax officials' adequate knowledge of the oil industry exist; and iii) petroleum tax policies help in achieving past payment of petroleum taxes.

The final section addressed issues relating to flexibility of the Nigerian petroleum tax system. Views of the respondents on the ability of the tax system to adjust to changes in tax regulations in other countries as well as increase in investors' risk of making losses were sought. Similarly, the respondents' views on the relationship between government take and the profitability of the oil companies as well as the control mechanisms of the tax system were sought. Other issues covered in the section were the tax system's response to fraudulent practices as well as the reaction of the tax system to requests by oil communities.

5.4.3.2 Pilot Study

A pilot study is "a specific pre-testing of research instruments, including questionnaire or interview schedules" (Van Teijlingen and Hundley, 2001:1). The importance of pilot testing has been acknowledged by many researchers. Blaxter et al (2006:137), for example, state that:

"You may think you know well enough what you are doing, but the value of pilot research cannot be overestimated. Things never work quite the way you envisage, even if you have done them many times before, and they have a nasty habit of turning out very differently from how you expected on occasion"

Welman and Kruger (1999) also identified the significance of pilot testing to include: i) needed for the detection of possible flaws in the measurement procedures and operationalisation of independent variables; ii) valuable to identify unclear or ambiguous items in a questionnaire; and iii) help gather information, through the non-verbal behaviour of respondents, about any embarrassment or discomfort concerning the content or wordings in a questionnaire.

Generally, the main aim of pilot study is to provide information that can contribute to the success of a research project. This is affirmed by quotes from many scholars, for example: "to see if the beast will fly" (De Vos et al, 2002:410), "Do not take the risk, pilot test first" (Van Teijlingen and Hundley, 2001:2). Pilot testing, therefore, saves some time, effort, and money which can be lost if a study fails because of unforeseen shortcomings. Additionally, pilot testing enables researchers to refine questions to be clearer and to ensure successful data recording (Saunders et al, 2003).

In this study, two pilot tests were conducted in succession. The first test was conducted at the Aberdeen Business School (ABS). Four research students, two academic staff, and one administrative staff took part in the exercise. Their comments, suggestions, and recommendations regarding the content, questions wordings and the layout of the instrument were all noted and the questionnaire revised accordingly.

The second pilot test was conducted in Nigeria with some respondents from across the stakeholders groups. As the oil and gas departments of the study's stakeholders' groups are all situated at their headquarters, all the respondents for the test were selected from the headquarters. Valuable comments and suggestions were received. Although there were no complaints either on the wordings or the clarity of the questions, most of the participants complained that the questionnaire was too lengthy and suggested its reduction. With the help of my supervisor, the questionnaire was thoroughly revisited, and revised in line with the participants' comments and recommendations.

5.4.3.3 Reliability and validity

The decision as to how research should be conducted in order to get the answers needed and to minimise the threats to the credibility of the findings requires the consideration of two important concepts: reliability and validity. Reliability and validity are quality evaluation concepts that are commonly used in quantitative research (Golafshani, 2003). Although, many naturalistic investigators, notably Lincoln and Guba

(1985)⁵⁰, have attempted to use different terminology in order to distance themselves from the positivist paradigm, several authors still argue that the broad and abstract concepts of reliability and validity can still be applied to all research as the general goal of finding plausible and credible explanations for outcomes is central to all research (Kuzel and Engel, 2001). Still further, some investigators, such as Pitts (1994), have attempted to respond directly to the issues of reliability and validity in their qualitative studies.

Reliability indicates the extent to which a variable or set of variables are in agreement with what it is intended to measure (Hair et al, 2005). It is simply described by Joppe (2000:1) as:

“The extent to which results are consistent over time and an accurate representation of the total population under study is referred to as reliability and if the results of a study can be reproduced under a similar methodology, then the research instrument is considered to be reliable”.

There are various threats to reliability. Saunders et al (2003) identified four of them, namely; participant error, participant bias, observer error, and observer bias. Participant error reflects the attitude of the respondents at the time of receiving the questionnaire. Where the timing of the receipt of the questionnaire is inappropriate for them, then results generated may be different from their actual beliefs due to stresses and variables of their surroundings. In this study the respondents were asked to fill the questionnaire within a period of three weeks. It is, therefore, believed that the respondents were not under stress and their answers

⁵⁰ In a seminar work in 1985, Lincoln and Guba used the concept of “trustworthiness” consisting of four aspects: credibility, transferability, dependability, and confirmability as a qualitative substitute for the quantitative concepts of reliability and validity.

not distorted. Participant bias, on the other hand, occurs when participants can be identified individually as they tend to give desirable answers. In this study respondents were anonymous. It is, therefore, assumed that this threat did not affect the reliability of the questionnaire.

Observer error occurs due to the way questions are asked in the questionnaire. This error is minimised by standardising more than 95% of the questions in this study. Making the questions to conform to particular style was to allow the respondents to interpret them in a similar way. Observer bias occurs when the researcher looks for data that support his or her point of view. To minimise this threat the researcher tried to be as objective as possible during the collection and the analysis of data.

Validity, on the other hand, is defined as the "appropriateness, meaningfulness, and usefulness of a measure for a specific purpose. Validity is generally seen as the most important consideration in the evaluation of a measure" (Jenson, 2003:2). Similarly, Saunders et al (2003), describe validity as ability of a study to truly measures what was intended to be measured, or how truthful research results are. A more precise definition of validity is the one given by AERA et al (1999:184) as "the degree to which accumulated evidence and theory support specific interpretations of test scores entailed by proposed uses of a test".

There are many different types of validity. Jensen (2003) identifies three the most common types of validity to be content, construct, and criterion validity. Content validity refers to the extent to which the items of a measure are representative of some defined domain of interest and it is

usually determined by expert judgement. Construct validity refers to how well questions related to the same objective correlate with each other and it is often established through factor analysis, opinion of judges, and known correlations among others. Criterion validity refers to how well results obtained from one data collecting instrument are supported by other surveys or questionnaires and it is often established by correlating the results of the different gathering instruments.

Just like reliability, there are also a number of threats to validity. Some of these, as identified by Lafaille and Wildeboer (1995), are: first, the composition of a research group also affects the validity of a research instrument. There is, for example, the problem of subject bias, in which the wrong people have been selected as respondents. This study avoided this threat by employing a careful selection procedure of respondents.

Second, the influence of participants' also affects the validity of an instrument. A research participant can have influence in several ways, including; belief system, social influence (such as sexual or social taboos), memory failure, and poor state of health (such as bad eye-sight). This threat is minimised by standardising more than 95% of the questions in this study. The standardisation of questions was to allow the respondents to interpret the questions in a similar way.

Third, there is the possibility of subject mortality. This threat has little or no effect on this study for two main reasons: participants' responses were gathered via a questionnaire and within a short period of time, and a reasonable number of questionnaires with allowances for possible eventualities were administered to respondents.

5.4.3.4 Administration of questionnaire

With the exception of three questionnaires⁵¹, all the returned questionnaires were personally administered to the respondents by the researcher. As all the Oil and Gas departments of the surveyed institutions were located in Abuja as at the time when the field work was conducted, the researcher went to these institutions and met with officers in charge of research and then handed over the questionnaires to them who in turn distributed them to the appropriate staff. In the case of NNPC, the researcher was not allowed to see the officer in charge of research. However, with the help of a colleague, who is an influential executive member of the Corporation's Union, the NNPC's portion of the questionnaire was distributed to the appropriate staff. In the same vein, the same colleague also helped in distributing the questionnaires for the MOCs and MPR.

Some of the questionnaires were returned within a week, while others took up a month and a half. A series of telephone calls and personal visitation to the institutions were made all with the view to maximise the response rate.

5.5 Methods of data analysis used in this study

Bogden and Bilken (1982:145) defined data analysis as:

“The process of systematically searching and arranging the interview transcripts, field-notes, and other materials that you accumulate to increase your understanding of them and to enable you to present what you have discovered to others”.

⁵¹ These were NNPC staff that were served an electronic copy of the questionnaire through their email box. They duly filled the questionnaire and returned via the researcher's email box.

Data analysis, Bogdan and Bilken (1982:145) further noted, involves:

“Involves working with data, organising it, breaking it into manageable units, synthesizing it, searching for patterns, discovering what is important and what is to be learned, and deciding what you will tell others”

Accordingly, Miles and Huberman (1994) describe data analysis as consisting of three activities: i) data reduction, ii) data display, referring to organised assembly of information to enable the making of conclusions, and iii) conclusion drawing and verification. These three activities are interwoven before, during, and after data collection.

Data reduction, which is otherwise called data condensation (Tesch, 1990), refers to the process of selecting, simplifying, abstracting, and transforming raw data, is an ongoing process throughout the analysis process. It can occur, according to Miles and Huberman (1994), through the choice of a conceptual framework and achieved through summaries, and coding among others. Data need to be reduced in order to make it more readily handy and understandable (Berg, 2004).

Data display, on the other hand, Miles and Huberman (1994:11) noted, is “an organised, compressed assembly of information that permits conclusion drawing and action”. The most frequent form of display, for qualitative data, in the past has been extended text. This is because it is cumbersome (Miles and Huberman, 1994). Data display is intended to organise the collected data in a way that will permit conclusion drawing (Berg, 2004). The creation and use of displays, as with data reduction, are not separate from analysis but part of it.

Conclusion drawing and verification involves drawing meaning from data and building a logical chain of evidence. Miles and Huberman (1994) noted that there should not be any definitive conclusion during data collection and preliminary conclusions should be verified.

The above processes can be achieved either by a parametric or non-parametric statistical tests. Parametric statistics, Geisser and Johnson (2006) noted, assume that data are drawn from a type of probability distribution (usually normal) and inferences are made about the parameters of the distribution. On the other hand, non-parametric statistics do not depend on the type of the probability distribution from which data were drawn. Table 5.3 presents some of the commonly statistical analysis together with parametric and corresponding non-parametric tests.

Table 5.3: Some Commonly Used Statistical Tests

Parametric	Nonparametric test	Purpose of test
<i>t</i> test for independent samples	Mann-Whitney U test; Wilcoxon rank-sum test	Compares two independent samples
Paired <i>t</i> test	Wilcoxon matched pairs signed-rank test	Examines a set of differences
Pearson correlation coefficient	Spearman rank correlation coefficient	Assesses the linear association between two variables.
One way analysis of variance (<i>F</i> test)	Kruskal-Wallis analysis of variance by ranks	Compares three or more groups
Two way analysis of variance	Friedman Two way analysis of variance	Compares groups classified by two different factors

Source: Dallal, 2001

From Table 5.3, the *t*-test and Mann-Whitney test are tests used for comparing the means of two independent groups under parametric and non-parametric statistics respectively. The *t*-test assumes that data are

normally distributed and the two groups have equal variances. It is arguably the most widely used statistical test and produces excellent results. However, when discrete and or much skewed data are analysed, t-test results may void. On the other hand, the Mann-Whitney test specifies that the two independent groups come from the same population and are homogeneous and have the same distribution. The Mann-Whitney test is one of the most powerful non-parametric tests (Landers, 1981) and like any other non-parametric test does not depend on assumptions on the distribution of the population.

Paired t-test and Wilcoxon matched pairs tests are parametric and non-parametric tests for examining set of differences. The paired t-test examines the mean differences of individual paired measurements and therefore appropriate for pre and post situations. It is suitable for the evaluation of constant difference between two values (Westgard and Hunt, 1973). However, when it is used to analyse other types of differences it may lead to a problem. Wilcoxon matched pairs test, on the other hand, is used to explore the magnitude of difference between matched groups. It is most powerful for using the quantitative information inherent in the ranking of the differences in rank that are obtained by the matched pairs.

Pearson correlation coefficient is a parametric statistical test which has the Spearman rank correlation coefficient as its non-parametric equivalent for measuring the linear relationship between two variables. The Pearson correlation coefficient measures the strength of the linear relationship between two variables and has the advantage of being

completely invariant to the linear transformations of these variables. Where the assumptions of the Pearson correlation are met but one or both of the variables are measured on ordinal scale instead of interval or ratio scale, then the Spearman's rank correlation coefficient is employed.

One way analysis of variance (ANOVA) and the Kruskal-Wallis tests are parametric and non-parametric tests that are employed in evaluating whether differences exist between three or more groups. ANOVA, which requires the homogeneity of variances, is a commonly used statistical test in many areas of science (Rice and Gaines, 1989). However, intergroup heteroscedasticity makes its application difficult.

Generally, parametric tests are often used and are more robust than non-parametric tests. For parametric tests to produce accurate results the assumptions underlying them must be sufficiently met. However, as Erceg-Hurn and Mirosevich (2008) noted, these assumptions are rarely met in practice. Thus, for this and other reasons non-parametric tests are most prepared in the social sciences.

In this study, data were analysed in line with the objectives of the study and involved the following steps.

1. Data reduction: This was achieved through the adoption of the economic rent theory as a framework, determination of appropriate respondents, and careful construction of survey questions. Tables and figures were used in displaying the data gathered and no conclusion was made during data collection process.

2. Data codification: Coding is “the process of converting questionnaire data into meaningful categories to facilitate analysis” (Williams, 2003). It involves the subdivision of the data and assignment of categories (Dey, 1993). According to Williams (2003) researchers either think of the coding scheme at the beginning of their research in order to allow direct data entry from the questionnaire into the database or alternatively code the questionnaire responses onto separate coding sheets then enter the data from the coding sheets into the database. For the purpose of this study, the questionnaire responses were coded onto separate coding sheets before entered into the database (Appendix B). With the help of the study’s supervisory team, the coding of the questionnaire was discussed with one of the statisticians of the Robert Gordon University. This was to avoid any mistakes during the coding stage.

3. Adoption of statistical package: In order to enable the entry of the coded data into the computer system, the SPSS statistical package was adopted. Although there are other statistical packages⁵² that could be adopted, the choice of the SPSS was informed by at least two reasons. First, it is an extremely powerful data analysis package that handles very compound statistical procedures (Pallant, 2005). Second, it is the most widely used package in social science research.

4. Missing value analysis: Missing values or data are questions with no answers or variables with no observations. This might be due to respondents refusing to answer a question, or because they do not understand the question, or there was not time for them to complete the

⁵² These include AtlasTi, Hyperreserch, Nud*ist, Nud*ist Nvivo, Decision Explorer, and Minitab, among others.

questionnaire, or that the respondents just lost interest. No matter how small that percentage, missing data can cause serious analysis problems. There is, for example, the problem of threat to the validity of a study, which, according to Croninger and Douglas (2005), is the main problem. In this study, having determined that the missing data were MCAR^{53,54}, the mean estimation technique was used in completing the missing values. It is used in this study for two reasons. First, the mean estimation technique is the most widely used technique (Raymond, 1986). Second, the SPSS software, which is employed in this study, has features that enable the computation of the mean automatically.

5. Statistical tests and discussion of results: After the missing values were completed, the main analysis of the data was conducted using descriptive and non-parametric statistical tests. The descriptive statistics used were mean, median, cross-tabulation, and frequencies. These were used to analyse the demographic characteristics of the respondents as well as to explain the overall perception of the respondents in relation to each of the variables tested. On the other hand, the non-parametric statistic used was the Mann-Whitney test. The Mann-Whitney tests between the groups were conducted and the responses between the groups were identified and discussed.

⁵³ Generally, there are three types of missing data that the literature on missing data identified (Nakai and Ke (2011): i) Missing completely at random (MCAR), which means the probability that responses are missing is unrelated to both the specific values that should have been obtained and the set of observed responses; ii) Missing at random (MAR), referring to the probability that responses are missing depends on the set of observed responses, but is unrelated to the specific missing values that should have been obtained; and iii) Not missing at random (NMAR), in which the probability that responses are missing depends on both the specific values that should have been obtained and the set of observed responses.

⁵⁴ The determination of the data as MCAR was through the Little's MCAR test. The test is based on the assumption that the calculated mean of the observed data in each assessment under MCAR is always the same regardless of the pattern of missingness (Little, 1988).

6. Summary of main findings: On the basis of the decisions made, a summary of the main findings together with the possible practical implications of each of the outcome was made. This summary served as the basis for the study's conclusion made in the final chapter.

5.6 Conclusion

In this chapter, a review of literature on research methodology and methods was carried out. This served as a basis for the research methodology and methods adopted for the study. Specifically the interpretive paradigm is adopted for this study. The choice of this paradigm informed the adoption of the ideographic methodology. With the respondents' objection to interview, the study employed only questionnaires in collecting the data for the study which were analysed using the SPSS computer software.

Chapter Six

Presentation and analysis of data

6.1 Introduction

The aim of this chapter is to analyse the questionnaire-based survey data collected. To achieve this, the rest of the chapter is divided into four sections. Section 6.2 gives an analysis of the response rate of the questionnaire. This is followed by the analysis of the demographic characteristics of the respondents using descriptive statistics in section 6.3. Section 6.4 discusses the analysis of the main findings from the survey. Finally, section 6.5 concludes the chapter.

6.2 Questionnaire response

The response rate of a questionnaire varies from one questionnaire to another and usually within the range of 10% to 90% (Walonick, 2004). However, well developed questionnaires, Walonick (2004) maintained, consistently produce high response rates. In this study, as noted in Chapter 5, a total of 139 questionnaires were administered to all the 10 groups of respondents and 95 of them were returned (see Table 6.1). Of the 95 returned questionnaires, 3 were excluded because they were not completed in accordance with the instructions given. With this exclusion, the remaining 92 questionnaires constitute 66% of the total questionnaires administered. This is a very good response rate given the evidence above.

Table 6.1: Questionnaires issued and returned

Respondents groups	Issued	Returned	Excluded	Used
1) Nigerian National Petroleum Corporation	15	15	0	15
2) Federal Inland Revenue Service	15	13	0	13
3) Central of Bank of Nigeria	15	10	0	10
4) Ministry of Petroleum Resources	15	7	0	7
5) Multinational Oil Companies	15	7	1	6
6) Accountant General's office	15	8	2	6
7) Auditor General's office	15	7	0	7
8) Nigerian Extractive Industries Transparency Initiative	4	4	0	4
9) National Assembly	15	11	0	11
10) Higher Institution of Learning	15	13	0	13
Total	139	95	3	92

Several reasons have contributed to the high response rate recorded in this study. One of the reasons is the influence of an introductory letter from my supervisor (see Appendix A). This letter, which is written on a letter headed paper of the Robert Gordon University, clearly emphasise the importance of the research as having not only educationally exciting but also an important economic consequences for Nigeria. This encouraged the respondents to partake in the survey.

The appealing nature of the questionnaire is also another reason that led to the high response rate achieved (see Appendix C). The questionnaire was accompanied by a cover page which states, among other things: the objective of the research, procedure for answering the survey questions, and a guarantee of confidentiality for respondents. Similarly, in order to

make it easier for the respondents to read the questions, each question in each section was separated from the other with a blank line and also typed in a 12 font size.

Furthermore, enough time was given to the respondents to answer the questionnaire. A period of three weeks with frequent follow-up through telephone calls and personal visits encouraged the respondents to complete the questionnaire. Motivated with this approach, some of the respondents, on completion of a questionnaire, gave the researcher telephone calls to come over and collect the completed questionnaire.

The cooperation from officers' in-charge of research in the institutions surveyed also helped in raising the response rate. With the help of these officers, the questionnaires were distributed to the right persons for completion.

6.2.1 Data check

The first step taken in the analysis is to ensure the integrity of the data by checking the accuracy of the data coding and entry. This was done by going through all the returned questionnaires and checking them against the data entered into the SPSS program file. There were about five cases in which the data were entered wrongly. For example, entering a value of 22 instead of 2 in a cell or in some cases a variable was jumped and its value entered in the next immediate variable cell. The identification of these errors informed the decision to crosscheck the entire returned questionnaire over and over again against the corresponding data on the computer file. All the errors were uncovered and accordingly corrected

6.2.2 Missing values

After a thorough analysis of the responses for missing values, 17 cases (representing 18.48% of total number of cases) were found to have missing values ranging from 1 to 6 values (see Table 6.2). These missing values constitute less than 1% of the total responses⁵⁵.

In order to handle the missing data, Little's MCAR test was run to ascertain the randomness of the missing values. The test revealed a Chi-square = 856.398 (DF=805, Sig=.102). Because the significant value (0.102) is greater than 0.05 alpha value, the data in this study are indeed MCAR (i.e., no identifiable pattern exists to the missing data). As a result the mean estimation technique is used to complete the missing data⁵⁶.

Table 6.2: Pattern of cases with Missing value

Cases	3	4	11	14	15	16	17	18	25	28	35	46	49	56	73	75	76
Missing Values	3	1	3	1	6	1	2	1	3	1	1	1	2	1	3	1	6

6.3 Demographic characteristics of respondents

Three demographic characteristics of the respondents were surveyed, namely: place of work, occupation, and years of working experience. These characteristics were initially thought to be useful for the analysis. However, after careful consideration of the fact that emerged from the

⁵⁵ There were 59 variables and 92 cases in all, implying a total of 5428 responses. Of these 37 cells were left unanswered. This translates to 0.68% of the total responses (37/5428).

⁵⁶ The reasons for adopting the mean estimation technique is given in Section 5.6.3.3

field work which suggests that occupation and years of working experience were not determinants of the respondents' knowledge of tax system design and administration these two characteristics were not used in the analysis. Nonetheless, the response frequencies of all the three demographic characteristics are reported in Table 6.3 below.

Table 6.3: Frequency of respondents' demographic characteristics

Place of Work	Frequency	Percentage
Nigerian National Petroleum Corporation	15	16.30
Federal Inland Revenue Service	13	14.13
Central of Bank of Nigeria	10	10.87
Ministry of Petroleum Resources	7	7.61
Multinational Oil Companies	6	6.52
Accountant General's office	6	6.52
Auditor General's office	7	7.61
Nigeria Extractive Industries Transparency Initiative	4	4.35
National Assembly	11	11.96
Higher Institution of Learning	13	14.13
Total	92	100.0

Occupation	Frequency	Percentage
Accountant	16	17.39
Auditor	11	11.96
Tax Official	14	15.22
Law Maker	5	5.43
Lecturer	13	14.13
Engineer	13	14.13
others	20	21.74
Total	92	100.0

Working experience in years	Frequency	Percentage
Less than 5 years	12	13.04
5 to 9 years	27	29.34
10 to 14 years	24	26.09
15 to 19 years	8	8.70
20 to 24 years	7	7.61
Greater than 24 years	14	15.22
Total	92	100.0

6.4 Main findings of the study

In this section, the six hypotheses developed for the study are tested. Hypothesis testing is a process that comprises of five steps: "i) assumptions making; ii) stating the research and null hypotheses and selecting alpha; iii) selecting the sampling distribution and specifying the test statistic; vi) computing the test statistic and v) making a decision and interpreting the results" (Lean-Guerrero and Frankfort-Nachmias, 2011:166).

The assumptions to be made, according to Lean-Guerrero and Frankfort-Nachmias (2011), are those relating to the level of measurement of variables, population distribution, sampling methods and sample size, among others. For the purpose of this study, the assumptions relating to all these aspects were discussed in Chapter 5.

The sections that follow present a descriptive analysis of the frequency distribution of the respondents' responses with a view to determine the overall perceptions of the respondents in relation to each of the 59 variables employed in the study. At 5% level of significance⁵⁷, Mann-Whitney tests were run to determine if any differences exist between the respondents groups. The resultant differences were analysed using crosstabulation tests.

⁵⁷ The choice of a level of significance in a research is a subjective task (Stigler, 2008). In the academic world, Christoffersen (2002) noted, a significant level of 1%, 5%, or 10% is normally used. However, for many applications, a 5% level of significant is chosen (Stigler, 2008).

6.4.1 Appropriateness of Nigerian petroleum tax system in balancing the interests of the government and the MOCs

This section relates to the first hypotheses of the study. The hypothesis, which is to be tested using the responses to five statements relating to section B of the research instrument, is restated as follows:

H1₁: Nigeria's petroleum tax system is a fair representation of the interests of the government and the MOCs.

Designing a tax system that reconciles the interests of the government and that of the investors requires the understanding and the application of at least two concepts, one of which, according to Andrews-Speed (2000), is economic rent. Thus, guided by the choice of economic rent as a framework, the study sought the respondents' views on each of the five statements relating to hypothesis H1₁ with a view to determining whether the Nigerian petroleum tax system has fairly captured the interests of the government and those of the MOCs.

Table 6.4 shows the frequencies and percentages of the respondents' views on the suitability of the objectives of the Nigerian petroleum tax system. There were a total of 92 responses for each of the five statements.

Table 6.4: Descriptive frequencies relating to petroleum tax objectives

Statements	M	Md	SA	A	N	D	SD	TR
i) Equity in the distribution of oil revenue between the government and the MOCs	3.18	3.50	8 (8.7)	20 (21.7)	18 (19.6)	39 (42.4)	7 (7.6)	92 (100)
ii) Yearly increase in government share of petroleum revenue	2.26	2.00	27 (29.3)	35 (38.0)	12 (13.0)	15 (16.3)	3 (3.3)	92 (100)
iii) Influence of tax incentives on MOCs investment decisions:	2.13	2.00	18 (19.6)	54 (58.7)	12 (13.0)	6 (6.5)	2 (2.2)	92 (100)
• Investment tax credit								
• Accelerated depreciation	2.77	3.00	10 (10.9)	31 (33.7)	27 (29.3)	18 (19.6)	6 (6.5)	92 (100)
• Guaranteed profit margin for MOCs	2.20	2.00	19 (20.7)	47 (51.1)	17 (18.5)	7 (7.6)	2 (2.2)	92 (100)
• Offsetting of new project costs with income of ongoing projects	2.40	2.00	17 (18.5)	37 (40.2)	27 (29.3)	6 (6.5)	5 (5.4)	92 (100)
iv) Distribution of tax revenue among the tiers of government in Nigeria:	1.98	2.00	39 (42.4)	33 (35.9)	8 (8.7)	7 (7.6)	5 (5.4)	92 (100)
• Federal government								
• State government	3.46	4.00	4 (4.3)	18 (19.6)	16 (17.4)	40 (43.5)	14 (15.2)	92 (100)
• Local government	3.50	4.00	5 (5.4)	15 (16.3)	16 (17.4)	41 (44.6)	15 (16.3)	92 (100)
v) Incentives for enhancing the international competitiveness of the Nigerian petroleum tax system:								
• Tax incentives package to investors	2.12	2.00	23 (25.0)	49 (53.3)	10 (10.9)	6 (6.5)	4 (4.3)	92 (100)
• Allocation of part of the oil production to multinational oil companies	2.39	2.00	19 (20.7)	39 (42.4)	19 (20.7)	9 (9.8)	6 (6.5)	92 (100)
• Guaranteed minimum rate of return to multinational oil companies	2.43	2.00	12 (13.0)	43 (46.7)	26 (28.3)	7 (7.6)	4 (4.3)	92 (100)
• Compensation of investors for any increase in risks	2.65	2.00	11 (12.0)	36 (39.1)	25 (27.2)	14 (15.2)	6 (6.5)	92 (100)

Note: i) M=Mean, Md=Median, SA=Strongly Agree, A=Agree, N=Neutral, D=Disagree, SD= Strongly Disagree, TR=Total Responses ii) All figures in brackets are percentages

6.4.1.1 Equitable distribution of oil revenue between the government and the MOCs

This section sought the respondents' views on equity in the distribution of oil rent between the government and the MOCs. The respondents' views were asked because producing nations are faced with the challenges of designing a fair and equitable tax regime that strikes a balance between their needs and that of the investors (Otto, 2000). The main reason for such difficulty is because:

"In matters of mining taxation, governments rarely believe that companies pay too much tax; companies rarely believe that they pay too little tax; and citizens rarely believe that they actually see tangible benefits from the taxes that are paid." (Otto et al, 2006:xi)

From Table 6.4, it can be seen that the respondents did not share the same opinion. 30% of the respondents agreed that there was an equitable distribution of oil rent between the government and the MOCs, while 50% disagreed and the remaining 20% were neutral. Given these diverse views about how equitable revenue is distributed between the Nigerian government and the MOCs operating in the country, Mann-Whitney tests were run to determine the differences between the groups. The result is presented in Table 6.5 below.

Table 6.5: Mann-Whitney tests for equitable distribution of petroleum rent

Mann-Whitney tests								
Groups	C	N ₁	F	M ₁	A ₁	A ₂	N ₂	N ₃
M ₁	.029		.026			.027		
M ₂		.021		.003	.032		.016	.010

- Note:** i) Only Mann-Whitney test results with p- values of less than or equal to 0.05 (i.e. $p \leq .05$) are shown in the table
- ii) N₁ = Nigerian national petroleum corporation (NNPC), F = Federal Inland Revenue Service (FIRS), C = Central Bank of Nigeria (CBN), M₁ = Ministry of Petroleum Resources (MPR), M₂ = Multinational Oil Companies (MOCs), A₁ = Accountant General's office (AGF), A₂ = Auditor General's office (AGO), N₂ = Nigeria Extractive Industries Transparency Initiative (NEITI), N₃ = National Assembly (NASS), and H = Higher Institution of learning (HIL).

The MOCs differed with five groups, namely; NNPC, MPR, AGF, NEITI and NASS. Two-third (i.e. 67%) of the respondents from the MOCs agreed that the distribution of petroleum rent between the government and the MOCs was equitable. This position was contrary to the 60%, 85%, 50%, 75% and 72% disagreement respectively held by the respondents from the NNPC, MPR, AGF, NEITI and NASS. These five groups are government agencies and, therefore, their disagreement might not be a surprise because it is consistent with the position in the literature that government across oil producing nations "rarely believe that companies pay too much tax" (Otto et al., 2006: xi). Accordingly, it could be argued that the Nigerian government was not satisfied that there was an equitable distribution of oil rent between it and the MOCs as demonstrated by the various petroleum policy reforms undertaken in the country over the years as discussed in Section 3.2.

From the findings above, it could be argued that there was no equity in the distribution of oil rent between the government and the MOCs. Hence, the research hypothesis H1₁ above is not accepted for this statement.

6.4.1.2 Yearly increase in government share of petroleum revenue

As most oil producing countries heavily depend on revenue from crude oil (see Table 2.2), these countries always “look for opportunities in the oil sector to enhance government revenue” (Adedipe, 2004:2). Thus, this statement was tested in order to ascertain whether, in the opinion of the respondents, Nigeria’s share of revenue from crude oil is increasing yearly.

Of the 92 respondents, 62 (representing 67%) of them were in agreement that the government share of oil rent was increasing year by year. Thus, on average (mean = 2.26), the respondents were in agreement. However, since 13% of the respondents were neutral and 20% were in disagreement, Mann-Whitney tests were run to determine if any differences exist between the groups. Table 6.6 presents the results.

Table 6.6: Mann-Whitney tests for yearly increase in government share of petroleum revenue

Mann-Whitney tests							
Groups	F	C	A ₁	A ₂	N ₂	N ₃	H
N ₁	.000	.002	.014			.040	.015
F				.012	.009	.004	.008
C				.036	.018	.014	.023

- Note:** i) Only Mann-Whitney test results with p- values of less than or equal to 0.05 (i.e. $p \leq .05$) are shown in the table
- ii) N₁ = Nigerian national petroleum corporation (NNPC), F = Federal Inland Revenue Service (FIRS), C = Central Bank of Nigeria (CBN), M₁ = Ministry of Petroleum Resources (MPR), M₂ = Multinational Oil Companies (MOCs), A₁ = Accountant General's office (AGF), A₂ = Auditor General's office (AGO), N₂ = Nigeria Extractive Industries Transparency Initiative (NEITI), N₃ = National Assembly (NASS), and H = Higher Institution of learning (HIL).

From Table 6.6, the NNPC differed from five groups, namely: FIRS, CBN, AGF, NASS, and HIL. A cross tabulation of the differences revealed that 53% of the respondents from the NNPC disagreed that the government share of petroleum revenue was increasing year by year. This finding contrasts vividly with the 100%, 90%, 83%, 73% and 77% agreed responses recorded from the FIRS, CBN, AGF, NASS, and HIL respectively. The NNPC's disagreement was quite unexpected because being the nation's only national oil company through which the government regulates and participates in the oil industry, it is expected that it should have an adequate knowledge of the yearly increase in the government's share of petroleum rent. However, since it neither collects nor accounts for revenue from crude oil disposal, it might not be in a privileged position of knowing the trend of government's revenue from oil rent compared to the CBN, FIRS, and AGF who are respectively responsibilities for the collection, custody and accounting for government revenue from crude oil disposal (see Section 3.6.2).

The NASS, unlike the NNPC, agreed that the government share of petroleum revenue was increasing year by year. As the representative of the people, parliaments across the world ensure "budget best matches the nation's needs with the available resources" by focusing on areas that need to be exploited or improved upon (Krafchik and Wehner, 1998). This yearly exercise clearly gives the NASS the opportunity to better understand the trend of the government share of revenue from crude oil.

The test results also revealed that the FIRS and the CBN differed with four other groups, namely: AGO, NEITI, NASS, and HIL. The differences here, however, relate to the extent of agreement as all the groups agreed: 57% of the respondents from the AGO agreed while 100% and 90% from the FIRS and CBN respectively agreed. This agreement suggests that Nigeria's share of oil revenue changes as circumstances in the oil sector changes and this concurs with the argument that a petroleum tax system that is designed to capture economic rent tends to increase government take when economic rent increases, and reduces government take when economic rent decreases (Nakhle, 2008).

Second, a comparison of the FIRS and CBN with NEITI revealed that the first 50% of the respondents from NEITI agreed while other 50% disagreed. NEITI as an institution was established to promote due process and transparency in the Nigerian extractive industry by conducting annual audit of the industry. So far, after eight years of existence, NEITI was only able to publish two audit reports. This might suggest that it was not having all the information it required in preparing its annual audit work. Where information is not adequate, the

available information may only be “applicable to a number of tasks being performed” (O’Reilly, 1982:756) and, as such, it is likely that persons performing different tasks within the same unit might well be differently informed. This might be the reason why the NEITI respondents did not share the same view.

Third, a comparison of the FIRS and the CBN with the NASS revealed that 73% of the respondents from the NASS, as against the 100% and 90% agreement from the FIRS and CBN, agreed that the government share of revenue from petroleum rent increases yearly. As most of the respondents from the NASS were law makers, their knowledge of the yearly trend of government revenue from petroleum is likely to be different to that of their counterparts from the FIRS and the CBN who are respectively responsible for the assessment and collection of taxes accruing to the government and maintenance of offshore bank account into which the MOCs pay all petroleum taxes due to the government (see Section 3.6.2).

On a general note, the evidence above suggests that the government share of revenue from petroleum taxation was increasing year by year. Therefore, in relation to this statement, hypothesis H1₁ is accepted.

6.4.1.3 Influence of petroleum tax incentives on MOCs investment decisions

Tax incentives are a very important aspect of petroleum taxation. Since governments across most oil producing nations do not have the technical and financial capability to carry on exploration and production (E&P)

activities, they turn to MOCs who have both the financial and technical strengths needed for the E&P of petroleum resources by offering them incentive packages purposely designed to attract investment (Anenih, 2003). Effectively, this helps the governments to achieve their desires for increased foreign direct investments while at the same time making the investment atmosphere economically attractive to the MOCs. In this way, the interests of both the government and the MOCs are captured in the tax system. This underscores the testing of this statement.

Table 6.7: Mann-Whitney tests for influence of petroleum tax incentives on MOCs investment decisions

a) Investment tax credit					
Groups	N ₁	M ₁	M ₂	N ₃	H
F	.008	.020	.036	.002	.023
b) Accelerated depreciation					
Groups	M ₁	M ₂	N ₂	N ₃	H
F	.001	.035	.005	.023	.039
c) Guaranteed profit margin					
Groups				M ₂	A ₂
N ₃				.033	.033
d) Cost Consolidation					
Groups			F	A ₂	H
C			.036	.021	.024

- Note:** i) Only Mann-Whitney test results with p- values of less than or equal to 0.05 (i.e. $p \leq .05$) are shown in the table
 ii) N₁ = Nigerian national petroleum corporation (NNPC), F = Federal Inland Revenue Service (FIRS), C = Central Bank of Nigeria (CBN), M₁ = Ministry of Petroleum Resources (MPR), M₂ = Multinational Oil Companies (MOCs), A₁ = Accountant General's office (AGF), A₂ = Auditor General's office (AGO), N₂ = Nigeria Extractive Industries Transparency Initiative (NEITI), N₃ = National Assembly (NASS), and H = Higher Institution of learning (HIL).

From Table 6.4, 72 (78%) of the total respondents from all groups agreed that investment tax credit influences the MOCs' investment

decisions. Of the remaining 20 (22%), 12 (13%) respondents were neutral, and 8 (9%) disagreed. With a mean score of 2.13 and median score of 2.00, the respondents, on average, were in agreement that investment tax credit influences investment decisions. An investigation into the differences between the groups in relation to the influence of investment tax credit on investment decisions revealed five differences (see Table 6.7). These differences, which relate to the extent of the agreement, were between the FIRS and five other groups, namely: NNPC, MPR, MOCs, NASS, and HIL. While 100% of the respondents from the FIRS agreed that investment tax credit influences investment decisions, only 80%, 86, 50%, 64% and 69% of the respondents respectively from the NNPC, MPR, MOCs, NASS and HIL agreed. This overwhelming agreement is not a surprise because investment tax credit, as a form of relief, has the effect of directly reducing the amount of taxes to be paid by the MOCs and empirically, just like any other incentive, has been found to be significant factors in influencing investment decisions (Allen and Wells, 2001).

In terms of accelerated depreciation, out of the 92 respondents 41 (45%) respondents agreed 24 (26%) disagreed and 27 (29%) were neutral. This distribution of response indicates the existence of differences among the groups. Mann-Whitney tests revealed five differences run (see Table 6.7). Again the differences here were also between the FIRS and five other groups, namely: MPR, MOCs, NEITI, NASS and HIL. First, 77% of the respondents from FIRS agreed while 71% of their counterparts from the MPR were neutral. The FIRS were likely to agree not only because it was the nation's institution responsible for the formulation of tax

regulations but also because tax incentives have empirically proved to be effective in attracting investments (Allen and Wells, 2001). The MPR, on the other hand, might be aware that tax incentives are effective in attracting FDI inflows but their neutral view suggested their reservation in the case of Nigeria as empirical evidence has shown that tax incentives are not an important consideration in investment decisions among firms operating in Nigeria (Hakam, 1996).

Second, in the case of the MOCs there was an equal distribution of the respondents' views among agreed, disagreed and neutral positions. The MOCs, having operated in many oil producing countries, might be expected to know that tax incentives do not always lead to an increase in FDI. This is because empirical evidence has shown that tax incentives have the potential of both increasing FDI (Allen and Wells, 2001) and decreasing FDI (Mooij and Ederveen, 2003 and 2005). In spite of this inconsistency in findings, it is, nevertheless, established that tax incentives, of which accelerated depreciation is one, are often provided to attract FDI (Fletcher, 2002).

Third, none of the respondents from NEITI agreed that accelerated depreciation influences investment decisions, instead 50% of them disagreed and 50% were neutral. The possible reason that account for the 50% disagreement was that many firms in Nigeria use accelerated depreciation incentive to engage in what is called "accounting engineering" (Nlerum, 2011)⁵⁸. As a result, old assets appreciate in value

⁵⁸ The term "accounting engineering" refers to the practice in which firms, under the cover of accelerated depreciation allowance, write off so much value of their assets in order to declare losses and also value obsolete stocks that worth nothing (see Nlerum, 2011).

even if they are worthless. This view might be that the respondents, as in the case of the MOCs, had the understanding that tax incentives do not necessarily lead to an increase in FDI.

Fourth, the HIL had a mixed response: 46% agreed, 31% neutral and 23% disagreed. Thus, the same argument made for MOCs views also applies here.

Guaranteed profit margin is also a special incentive offered by the Nigerian government to the MOCs. 72% of the total respondents agreed, 19% were neutral and 9% disagreed. On average, the respondents were, therefore, in agreement that this incentive influences investment decision of the MOCs. This view confirms Allen and Wells (2001) findings that tax incentives positively impact on MOCs' investment decisions and in particular the fact that it has succeeded in reducing the tax burden of the MOCs (see Khan, 1994).

From Table 6.7, only two differences relating to guaranteed profit margin between the groups were recorded. A cross analysis of the differences revealed that all the three groups agreed that guaranteed profit margin influences investors investment decisions. While 100% of the NASS respondents agreed, 67% and 71% of the respondents from the MOCs and AGO agreed respectively. The respondents' agreements implied that the government motive of providing the incentive to reduce the MOCs tax burden and stimulate inward investments, as discussed in Section 3.2, was a right decision.

Offsetting the costs of new projects from the incomes of ongoing projects (i.e. cost consolidation) is another incentive given by many oil producing

nations. Descriptive statistics of the respondents' views on this incentive revealed about 59% of the respondents were in agreement. With a mean score of 2.40 and a median score of 2.00, the result suggests that cost consolidation is an incentive that influences MOCs investment decisions in Nigeria. This view further validates Allan and Wells's (2001) findings referred to earlier. Mann-Whitney tests results for the differences between the groups are presented in Table 6.7.

A cross tabulation of the differences indicated that 100% of the respondents from the CBN agreed that cost offset influences the MOCs investment decisions while only 46%, 57% and 54% of the respondents from the FIRS, AGO and HIL agreed. These differences in agreement rates were partly accounted for by the neutral position taken by about one-third of the respondents from the FIRS, AGO and HIL.

In summary, a majority of the respondents agreed that all the four incentives tested influence the investment decisions of the MOCs. These agreements confirm the position in the literature that tax incentives are significant determinants of FDI (see Allen Wells, 2001). The agreements also confirm Olabisi's (2009) empirical findings that tax incentives are an important requirement for Nigeria's economic growth and development. Although there were some differences between the groups, it is evident that most of the differences were in relation to the strength of agreement between the different groups. Therefore, the research hypothesis H1₁ stated above is accepted in relation to these statements.

6.4.1.4 Distribution of tax revenue among the three tiers of government in Nigeria

This is the fourth statement relating to hypothesis H1₁. In this regard, the respondents' views were sought on whether the three tiers of governments in Nigeria (i.e. Federal, State, and Local) are satisfied with the formula for sharing revenue from petroleum taxation^{59,60}. Petroleum revenue (and indeed all other revenue) that accrue to Nigeria is shared, on a monthly basis, among the three tiers using a revenue sharing formula.

The rationale for asking this question was based on the realisation of the importance of revenue sharing among the components parts in a federal state as Watts (1970:46) argues thus:

“Federal finance is an extremely important and controversial subject because: first, it affects the allocation of administrative responsibility because the financial resources available will place limits on the scope of administration which either level of government is able to sustain. Second, it affects the political balance because whichever level of government has the major financial resources, finds its hands the means of political control. Third, it is significant also because the assignment of fiscal and expenditure powers will use these instruments to control the economy”

An analysis of the overall mean and median scores of the groups revealed a mean of 1.98 and a median score of 2.00 under Federal government tier, indicating that all the groups have strong views that the Federal government is satisfied with the way revenue from petroleum is

⁵⁹ Nigeria's current revenue sharing formula is: Federal government; 48.5%, State government; 24%, Local governments; 20%, and special fund; 7.5%.

⁶⁰ Revenue sharing formula in Nigeria is designed and revived, at least every five years, by the Nigerian Revenue Mobilisation, Allocation and Fiscal Commission. This Commission is an autonomous body and does not receive direction from any person or authority in the discharge of its duties (RMAFC, 2012).

shared. This view represents the views of 78% of the respondents. The Mann-Whitney tests between the groups revealed only a single difference between the groups and that was between the FIRS and NEITI (Table 6.8).

Table 6.8: Mann-Whitney Tests for Revenue Distribution among the three Tiers of Government in Nigeria

a) Revenue distribution to Federal government				
Groups				N ₂
F				.006
b) Revenue distribution to Local governments				
Groups	M ₁	M ₂	A ₂	N ₃
F		.044		.025
M ₂			.012	.006
N ₂	.036		.038	.027

- Note:** i) Only Mann-Whitney test results with p- values of less than or equal to 0.05 (i.e. $p \leq .05$) are shown in the table
 ii) N₁ = Nigerian national petroleum corporation (NNPC), F = Federal Inland Revenue Service (FIRS), C = Central Bank of Nigeria (CBN), M₁ = Ministry of Petroleum Resources (MPR), M₂ = Multinational Oil Companies (MOCs), A₁ = Accountant General's office (AGF), A₂ = Auditor General's office (AGO), N₂ = Nigeria Extractive Industries Transparency Initiative (NEITI), N₃ = National Assembly (NASS), and H = Higher Institution of learning (HIL).

Analysis of the differences revealed that 100% of the respondents from the FIRS agreed that the Federal tier was satisfied with the way oil revenue was shared among the three tiers of the Nigerian government. On the other hand, 50% of the NEITI respondents agreed and other 50% disagreed. While it might be argued that the NEITI respondents based their disagreement on the financial difficulties the Federal government was facing⁶¹, it is not enough to justify that the Federal government was

⁶¹ The Nigerian government was financially constrained in the last few years. This made the government to take various measures of improving its financial position including the widely criticised removal of petrol products subsidy.

not satisfied as it was receiving 48.5% of revenue that accrues to the federation (see Table 3.1).

A look at the median scores reported for both the State and Local governments revealed that the groups' responded in the opposite direction to that of the Federal government. With less than 25% agreement and almost 57% disagreement response rates, the respondents were of the view that both the State and the Local governments were not satisfied with the way revenue from petroleum tax is shared. This might be due to the fact that the States, particularly those from the oil producing regions, have for many years been clamouring for a review of the revenue formula and have been publicly voicing their views (Kalu, 2012). There are currently 36 States in Nigeria and all of them put together get only 24% share of the total revenue (see Table 3.1).

Mann-Whitney tests between the groups in respect of the State government showed no difference in the opinion between the groups. However, in relation to the Local government, seven differences were revealed between the groups. From Table 6.8, the FIRS differed from MOCs and NASS. The FIRS and the MOCs responded in different directions. 54% of the respondents from the FIRS disagreed that the Local governments were satisfied with the distribution of the oil revenue while 50% of the respondents from the MOCs agreed. The views of the MOCs might not be appropriate because of the serious agitation by state and local governments in the country, in recent years, for new revenue allocation formula to replace the existing one which has been described

as outdated and out of tune with the current realities of Nigeria (Economic Confidential, 2011).

The FIRS and the NASS, on the other hand, differed in the strength of disagreement. 54% of the FIRS respondents disagreed while 90% of the respondents from the NASS disagreed. As law makers who represent their localities⁶², their strong disagreement might be an indication of their desire toward ensuring that the sharing formula is reviewed to balance the interests of all the three tiers of governments. This argument is consistent with the outcome of the recent debate by the NASS on the need to review the existing revenue formula (Fabiya, et al., 2012).

On a general note, since the findings above indicated that both the State and Local governments were perceived not to have been satisfied with the current revenue sharing, it could be argued that the distribution of revenue among the three tiers of government was not satisfactory. Hence, the research hypothesis H1₁ is rejected in relation to this statement.

6.4.1.5 International competitiveness of the Nigerian petroleum tax system

This section tests the fifth statement of hypothesis H1₁. Respondents' views on the international competitiveness of the Nigerian petroleum tax system in four different areas were sought: i) tax incentive packages to investors; ii) allocation of part of oil production to MOCs; iii) guaranteed

⁶² The NASS in Nigeria comprises of two chambers: the Senate and the House of Representative. It comprises of 109 senate members and 260 House of representative members. Each state of the federation is represented by 3 senate members and an appropriate number of house of representative members depending on the number of local governments in each state.

minimum rate of return to MOCs; and iv) compensation of investors for any increase in risks.

Most oil producing nations do not have the technical and financial capacity to undertake E&P activities, and as such, they turn to the MOCs for investment in such activities (Anenih, 2003). Given this constraint and the enormous investment opportunities open to the MOCs, producing nations have no choice other than to make their tax regimes more competitive by providing investors with incentive packages such as those mentioned above.

First, in relation to tax incentive packages to the MOCs, 78% of the respondents agreed that the incentive packages positively impacted on the international competitiveness of the Nigerian petroleum tax system. Although 11% of the respondents disagreed, the mean score of 2.12 suggests that the respondents, on average were in agreement. Tests for the differences between the groups are summarised in Table 6.9.

Table 6.9: Mann-Whitney tests for international competitiveness of the Nigerian petroleum tax system

a) Tax incentive package to investors						
Groups	F	C	M ₂	A ₂	N ₃	H
F			.047		.043	
M ₁	.003	.006		.021		.049
b) Guaranteed minimum rate of return to the MOCs						
Groups			N ₁	M ₂	A ₂	
N ₃			.045	.013	.008	

Note: i) Only Mann-Whitney test results with p- values of less than or equal to 0.05 (i.e. $p \leq .05$) are shown in the table
 ii) N₁ = Nigerian national petroleum corporation (NNPC), F = Federal Inland Revenue Service (FIRS), C = Central Bank of Nigeria (CBN), M₁ = Ministry of Petroleum Resources (MPR), M₂ = Multinational Oil Companies (MOCs), A₁ = Accountant General's office (AGF), A₂ = Auditor General's office (AGO), N₂ = Nigeria Extractive Industries Transparency Initiative (NEITI), N₃ = National Assembly (NASS), and H = Higher Institution of learning (HIL).

None of the respondents from both the FIRS and MOCs disagreed that Nigeria's petroleum tax incentive package has an impact on the international competitiveness of the Nigerian petroleum tax system. This possibly explains why there are currently eighteen MOCs operating in Nigeria with some being established as far back as 1937 (NIPC, 2012). However, while 100% of the respondents from the FIRS agreed, only 50% of their counterparts from the MOCs agreed, with the remaining 50% being neutral. As the MOCs have operating experiences in many oil producing countries across the world, the neutral view expressed by the 50% respondents could suggest their reservation concerning the relative competitiveness of the Nigerian petroleum tax system. It could equally well be that they did not feel they had the necessary information to express a positive opinion.

Second, just as in the case of tax incentive packages, the overall response median score (2.00) of the respondents indicates that, on average, the respondents were in agreement that allocation of part of oil production to the MOCs positively impacts on the international competitiveness of the Nigerian petroleum tax system. This view confirms the MOCs preference for PSC earlier discussed in Section 2.5.2 and further explains that Nigeria's move toward PSC is a right policy choice. The Mann-Whitney tests conducted to determine if any differences exist between the groups revealed no differences at the alpha value of 5% set for the study.

The third incentive package tested is the provision of guaranteed minimum rate of return to the MOCs. In this case, 55 respondents, representing 60% of the total respondents, agreed that the provision of guaranteed minimum rate of return to the MOCs was positive on the international competitiveness of the Nigerian petroleum tax system. The rapid increase in the number of MOCs operating in Nigeria coupled with the discovery of important oil fields, such as Chota and Nnwa-1 oil fields following the introduction of the incentive in 1977 (see Frynas, 2000)⁶³ suggest that the respondents' agreement was a call for the government to timely revise the incentive as deemed appropriate⁶⁴. An investigation of the differences between the groups disclosed three statistically significant differences.

⁶³ Chota and Nnwa-1 oil fields were discovered in 1998 and 1999 respectively by Conoco and Statoil oil companies. The two fields have oil reserves of 60 and 200 million barrels respectively

⁶⁴ From 1977 to 1991 the guaranteed minimum margin to the MOCs in Nigeria was revised three times: 1977 (\$0.80), 1982 (\$1.60), 1986 (\$2.00), and 1991 (\$2.50)(see Frynas, 2000).

From Table 6.9, it can be seen that the NASS views differed from those of NNPC, MOCs and AGO. Further, 90% of the respondents from the NASS agreed that a guaranteed minimum rate of return improves the international competitiveness of the Nigerian petroleum tax system while about 40% of the respondents from the NNPC and MOCs disagreed. One of the possible reasons for the disagreed view among the respondents from the NNPC and MOCs was that guaranteed minimum rate of return, as tax petroleum incentive, is provided by producing nations to cushion the effects of any possible oil crisis. As such, it could be argued that it is only competitively effective when there is a global oil crisis and hence the respondents' disagreement. However, in the case of Nigeria, as discussed in Section 3.2, although the incentive was mostly fashioned during the oil glut of the 1980s, the resultant discovery of important oil fields and government's continued use of the incentive is an indication that the incentive may be positively impacting on the competitiveness of the Nigerian petroleum tax system.

Fourth, on compensation of the MOCs for any increase in their risks, the statistics showed that 51% of the respondents agreed that compensation for an increase in risk impacts positively on the international competitiveness of the Nigerian petroleum tax system. A comparison for the differences between the groups revealed only one statistically significant difference between the NASS and the HIL who held 55% disagreement and 69% agreement respectively. The agreement by the HIL was not a surprise given the vast knowledge they have on issues relating to petroleum E&P activities. Petroleum E&P is a high risk business characterised by high geological and financial risks (Suslick,

2009) and because of this the MOCs are continuously faced with the decisions of allocating their scarce resources. Thus, any increase in the geological and financial risks of the MOCs that is not compensated by the host country might lead to diversion of investments to other countries.

Based on the findings above, it could be argued that all the four incentive packages were perceived to be positive in impacting on the international competitiveness of the Nigerian petroleum tax system. Hence, in relation to this statement, the research hypothesis H1₁ is accepted.

6.4.2 Suitability of the Nigerian petroleum tax instruments in meeting the objectives set for the tax system

As discussed in Section 2.4.2, petroleum tax instruments are applied in order to achieve set petroleum tax objectives. In this section, the research hypothesis H1₂, which is restated below, is tested on five different petroleum tax instruments employed in Nigeria: i) bonuses and fees; ii) royalty; iii) income tax; iv) participation; and v) production sharing. These instruments, as discussed in Chapter 3, are the main petroleum tax instruments employed in Nigeria. Therefore, an insight into the effectiveness of these instruments is important for determining whether Nigeria's petroleum tax system has the appropriate tax instruments capable of meeting the nation's petroleum tax objectives.

H1₂: Nigeria's petroleum tax instruments are suitable for achieving the objectives set for the petroleum tax system.

Table 6.10 below presents the descriptive statistics of the respondents' views on the appropriateness of the tax instruments in achieving the nation's petroleum tax objectives.

Table 6.10: Descriptive frequencies relating to Nigeria's petroleum tax instruments

Statement	M	Md	SA	A	N	D	SD	TR
Effectiveness of petroleum tax instruments	2.33	2.00	18 (19.6)	41 (44.6)	19 (20.7)	13 (14.1)	1 (1.1)	92 (100)
• Bonuses and fees								
• Royalty	2.14	2.00	23 (25.0)	46 (50.0)	14 (15.2)	5 (5.4)	4 (4.3)	92 (100)
• Income tax	2.33	2.00	14 (15.2)	49 (53.3)	14 (15.2)	15 (16.3)	- -	2 (100)
• Participation	2.65	3.00	15 (16.3)	27 (29.3)	30 (32.6)	15 (16.3)	5 (5.4)	92 (100)
• Production sharing	2.51	2.00	20 (21.7)	33 (35.9)	17 (18.5)	16 (17.4)	6 (6.5)	92 (100)

Note: i) M=Mean, Md=Median, SA=Strongly Agree, A=Agree, N=Neutral, D=Disagree, SD= Strongly Disagree, TR=Total Responses ii) All figures in brackets are percentage

From Table 6.10, 59 respondents, representing 64% of the total respondents, agreed that bonuses and fees were effective in achieving the objectives of the Nigerian petroleum tax system. On the other hand, only 15% of the respondents disagreed. With a mean score of 2.33 and a median score of 2.00, the respondents, on average, agreed that bonuses and fees were effective in achieving Nigeria's petroleum tax objectives. On individual levels, eight differences were recorded between the groups (Table 6.11).

Table 6.11: Mann-Whitney tests for suitability of Nigerian petroleum tax instruments in achieving Nigeria’s petroleum tax objectives

a) Bonuses and fees							
Groups	F	C	A ₁	A ₂	N ₂	N ₃	
N ₁	.003		.049		.014		
M ₁	.001	.010		.008	.011	.027	
b) Royalty							
Groups		N ₁	M ₁	M ₂	N ₃		
F		.014	.020	.041	.049		
c) Income tax							
Groups	N ₁	F	C	M ₁	N ₃		
A ₂	.018	.018	.023	.026	.028		
N ₂	.039		.026	.028			
d) Participation							
Groups	F	M ₁	A ₂	N ₃			
M ₁	.039						
N ₂		.023	.032	.030			
e) Production sharing							
Groups	C	M ₁	M ₂	A ₂	N ₂	N ₃	H
N ₁			.044		.044		
F		.015	.004	.043			.046
N ₂	.047	.014	.007	.031		.040	.016

Note: i) Only Mann-Whitney test results with p- values of less than or equal to 0.05 (i.e. $p \leq .05$) are shown in the table
 ii) N₁ = Nigerian national petroleum corporation (NNPC), F = Federal Inland Revenue Service (FIRS), C = Central Bank of Nigeria (CBN), M₁ = Ministry of Petroleum Resources (MPR), M₂ = Multinational Oil Companies (MOCs), A₁ = Accountant General’s office (AGF), A₂ = Auditor General’s office (AGO), N₂ = Nigeria Extractive Industries Transparency Initiative (NEITI), N₃ = National Assembly (NASS), and H = Higher Institution of learning (HIL).

From Table 6.11, the first set of differences were between the NNPC and three groups, namely; FIRS, AGF and NEITI in which only 47% of the respondents from the NNPC agreed that bonuses and fees were effective in achieving tax objectives while 92%,67% and 100% of the respondents from the FIRS, AGF and NEITI agreed. With a 43% disagreed response

rate, the MPR differed from the FIRS, CBN, AGO, NEITI and NASS that respectively had 92%, 70%, 86%, 100% and 64% agreed response rates. As the analysis in Section 6.4.1.5 revealed that, based on the perceptions of the “experts” surveyed, the Nigerian petroleum tax system is internationally competitive, the agreement expressed by the respondents from the FIRS, CBN, AGF, AGO, NEITI and NASS is arguably the perceived wisdom because the position of the literature on bonuses is that they are usually effective in areas where competition is keen among the MOCs (Sunley et al., 2002).

In terms of royalties, the distribution shows that 75% of the total respondents agreed while about 10% disagreed. On average, as indicated by the mean result of 2.14, the respondents were in agreement that royalties were effective in achieving Nigeria’s petroleum tax objectives. Mann-Whitney tests for the differences between the groups revealed that the FIRS differed from four other groups, namely; NNPC, MPR, MOCs, and NASS (Table 6.11).

First, the FIRS differed from the NNPC and MOCs in strength of agreement. The FIRS held a 100% view that royalty was an effective tax instrument in achieving tax objectives while the NNPC and MOCs respectively held 60% and 83% agreed responses. On the other hand, although the MPR and the NASS had agreed to some extent, they differed from the FIRS by holding 42% and 27% disagreed responses. Although those respondents who disagreed might have based their views on the basis of the fact that the MOCs are resistance to the use of

royalties by host countries (Sunley et al., 2002)⁶⁵, their views might not be correct because royalty is considered as a factor payment similar to factor payments for capital and labour input (Conrad et al., 1990) and is paid to the government as soon as production starts (Sunley et al., 2002). Thus, the view that royalties are effective in achieving Nigeria's petroleum tax objective is arguably the most correct view.

The effectiveness of income tax in achieving the objectives set for petroleum tax system in Nigeria was agreed to by 69% of the total respondents. With a mean score of 2.33, the respondents were convinced that income tax, just like bonuses and royalty, was an effective instrument for achieving tax objectives. At group level, there were, however, some differences between the groups. These differences are presented in Table 6.11.

First, the AGF shared different views with the NNPC, FIRS, CBN, MPR, and NASS. The differences between the AGF and three of the groups - NNPC, CBN and NASS - relate to the extent of agreement: 83% of the respondents from AGF agreed while 60%, 60% and 73% of the respondents from NNPC, CBN and NASS agreed respectively. In comparison with the MPR, on the other hand, the difference was due to the mixed opinion held by the MPR: 43% agreed and 29% disagreed. Similarly, an analysis of the differences between the NEITI had and the NNPC and CBN revealed that the differences were due to strength of agreement in which NEITI held 100% agreed views while the NNPC and the CBN each held 60% agreed views. Income tax is creditable against

⁶⁵ MOCs dislike the use of royalties because royalties are only allowed as deductible expenses for income purposes but are not allowed as tax credits at the MOCs home countries' income tax (Sunley et al., 2002).

the income tax levied in the MOCs' home country (Sunley et al., 2002). As such, the MOCs expect to be taxed in the host country otherwise they might be heavily taxed in their home country. Hence, the appropriateness of the respondents' agreed view.

The respondents' view on participation was mixed with 46% agreed, 33% neutral and 21% disagreed. With a mean score of 2.65, it appears the respondents on average were neutral. Some of the groups, however, differed between themselves (Table 6.11).

First, an investigation of the differences revealed that the respondents from the MPR and FIRS differed in that 43% of the respondents from the MPR disagreed that participation was an effective instrument in achieving tax objectives while 54% of their counterparts from the FIRS agreed. Second, NEITI shared different view with the MPR, AGO and NASS with 75% of its respondents in agreement while 43% and 43% of the respondents from the MPR and AGO in disagreement. The MPR, AGO and NASS arguably disagreed because the country is moving toward PSC in recent years (Asiodu, 2009). However, as discussed in Section 3.5.1, the Nigerian government, through the NNPC has been participating in six JV contracts with the MOCs and collectively these JVs account for over 95% crude oil production in Nigeria. In addition, since there is no evidence suggesting that the government has the intention of relinquishing its stake in the JV contracts, it is appropriate to argue that the agreed view by the FIRS and NEITI were most correct.

In relation to production sharing, 58% of the total respondents agreed that it was an effective instrument in achieving the tax objectives while

24% disagreed. However, as indicated by a median score of 2.00, the respondents were on average in agreement. An investigation of the differences between the groups revealed some differences. First, the NNPC differed from NEITI in strength of agreement: 67% of the respondents from the NNPC agreed while 100% from NEITI agreed. A possible reason for their agreement could be Nigeria's trend toward PSC. Second, none of the MOCs' respondents agreed that production sharing was effective, instead 67% of them decided to be neutral. Since most of the Nigeria's PSCs are with the existing MOCs operating in Nigeria who are in JV agreements with the government (see Section 1.2), the MOCs' neutral view might not be a suggestion of the ineffectiveness of the PSCs but rather an admittance of some ethical issues surrounding the award of the PSCs as questioned in Section 1.2. Hence, the agreed view that Nigeria's PSCs were effective in achieving Nigeria's petroleum tax objectives is arguably the most correct.

Overall, the analysis above revealed that, from the respondents' perception, Nigeria's petroleum tax instruments were effective in achieving Nigeria's petroleum tax objectives. Thus, the research hypothesis H1₂ is accepted in relation to this statement.

6.4.3 Nigeria's administrative plan for petroleum tax matters

In this section, the third hypothesis was tested. The hypothesis, which is restated below, is based on three main aspects of Nigeria's administrative plan for petroleum tax matters, namely; comprehensiveness, flexibility, and cost effectiveness of administration.

H1₃: Nigeria has in place a sound administrative plan for petroleum tax matters.

Respondents' views on the administrative plan for petroleum tax matters were sought for a number of reasons. First, the establishment of a comprehensive tax administration system is one of the most serious and difficult problems that developing countries face (Edwards, 1991). Thus, respondents' opinions in this respect are very important in understanding the administrative effectiveness of Nigeria's petroleum tax system. Second, flexibility is very important in the administration of the petroleum tax system because of the volatility of the global oil environment. Flexibility will allow changes to be made in good time, thus, avoiding the difficulties of making relevant massive reforms to the tax system in the long run. Third, cost effectiveness is a core requirement for a sound administrative system and leads to cost savings to the government.

Descriptive statistics of the respondents' views on the administrative plan for petroleum tax matters are summarised in Table 6.12

Table 6.12: Descriptive frequencies relating to Nigeria's administrative plan for petroleum tax matters

Statement	M	Md	SA	A	N	D	SD	TR
Nigeria's administrative plan for petroleum tax matters is:								
• Comprehensive	3.01	3.00	8 (8.7)	25 (27.2)	25 (27.2)	26 (28.3)	8 (8.7)	92 (100)
• Flexible	2.65	3.00	9 (9.8)	36 (39.1)	27 (29.3)	18 (19.6)	2 (2.2)	92 (100)
• Cost effective	3.26	3.00	6 (6.5)	22 (23.9)	22 (23.9)	26 (28.3)	16 (17.4)	92 (100)

Note: i) M=Mean, Md=Median, SA=Strongly Agree, A=Agree, N=Neutral, D=Disagree, SD= Strongly Disagree, TR=Total Responses ii) All figures in brackets are percentages

From Table 6.12, 33 (36%) of the total respondents agreed that the administrative plan of the Nigerian petroleum tax matters was comprehensive while 25 (27%) remained neutral, and 34 (37%) disagreed. However, on average, both the mean (3.01) and the median (3.00) indicate that the respondents were neutral. A number of differences were, however, reported between the groups (Table 6.13).

Table 6.13: Mann-Whitney Test results for Nigeria’s administrative plan for petroleum tax matters

a) Comprehensiveness of Nigerian administrative plan for petroleum tax matters						
Groups	F	C	M ₂	A ₁	A ₂	H
N ₁	.036	.030		.021		.009
M ₁	.024	.028	.019	.013	.032	.008
N ₂	.050		.021	.019	.047	.028
N ₃	.002	.007	.003	.002	.004	.002
b) Flexibility of Nigerian administrative plan for petroleum tax matters						
Groups	F	C	A ₁	A ₂	N ₂	H
N ₁	.043	.037	.009	.041	.021	.002
c) Cost effectiveness of Nigerian administrative plan for petroleum tax matters						
Groups					F	H
N ₁					.029	.012
M ₁					.034	.015

Note: i) Only Mann-Whitney test results with p- values of less than or equal to 0.05 (i.e. $p \leq .05$) are shown in the table

ii) N₁ = Nigerian national petroleum corporation (NNPC), F = Federal Inland Revenue Service (FIRS), C = Central Bank of Nigeria (CBN), M₁ = Ministry of Petroleum Resources (MPR), M₂ = Multinational Oil Companies (MOCs), A₁ = Accountant General’s office (AGF), A₂ = Auditor General’s office (AGO), N₂ = Nigeria Extractive Industries Transparency Initiative (NEITI), N₃ = National Assembly (NASS), and H = Higher Institution of learning (HIL).

From Table 6.13, the NNPC, with 60% of its respondents in disagreement, differed from four groups, namely: FIRS, CBN, AGF, and

HIL who held 46% (agreed), 60% (agreed), 50% (neutral), and 69% (agreed) views respectively. Similarly, the MPR and NASS, with 57% and 91% disagreement respectively, differed from six other groups out of which four were those that disagreed with the NNPC. The other two groups were the MOCs and AGO who respectively held 67% and 43% neutral response. Furthermore, just like the NNPC and MPR, the NEITI held 75% disagreement, making it different from the FIRS, CBN, and AGF. One of the possible reasons for the disagreed view might be the ongoing plan by the government to reform the Nigerian petroleum industry via the PIB as noted in Section 1.2. This might not be a valid reason because governments, from time to time, undertake reform programmes in order to make their tax systems in tune with existing realities in the global oil industry. The neutral views, on the other hand, expressed by the MOCs and AGO might be an indication that the existing tax plan was comprehensive as evidence has shown that the MOCs were in stiff resistance for the passage of the nation's petroleum industry bill (PIB)⁶⁶. Therefore, the agreement expressed by the FIRS, CBN, and HIL is arguably correct because the review in Section 3.6 clearly demonstrates that Nigeria's petroleum tax administrative system has adequately captured all the requirements for petroleum tax administration as reviewed in Section 2.6.1 through 2.6.3.

Flexibility is the second aspect of the administrative plan tested in which six differences were recorded. These differences were between the NNPC and six other groups. About 50% of the respondents from the NNPC

⁶⁶ The PIB has been with the National Assembly since 2008, but as a result of pressure from the MOCs for the removal of certain sections of the bill which the government is still contemplating on, it has not yet been passed (Alike, 2011).

disagreed that the administrative plan was flexible while 50%, 67%, 57%, 75 and 77% of the respondents from the CBN, AGF, AGO, NEITI and HIL agreed respectively. Flexibility allows for adjustments to be made to tax systems in line with changing circumstances. In Nigeria, significant changes have been made in recent years to the tax system that repealed obsolete provisions and simplified the complex ones (Oloyede, 2012). This possibility suggests that adequate provisions were in place that allows changes to be made when necessary. Hence, the view that the administrative plan was flexible is argued to be most appropriate.

In terms of cost effectiveness, four differences were recorded. The first two differences were between the FIRS and two groups: NNPC and MPR in which the FIRS held 39% disagree and 39% neutral views that the administrative plan was cost effective while 73% and 72% from the NNPC and MPR disagreed respectively. The remaining two differences were between the HIL and the NNPC and MPR in which 62% of the respondents from the HIL agreed. Since the FIRS is the main tax institution in Nigeria that is vested with the responsibility for the assessment and collection of all taxes due to government, it is well positioned to know the cost effectiveness of the administrative plan, and hence it could be argued that the neutral response expressed by its respondents was an indication of cost ineffectiveness of the tax system. This is consistent with the position of the Technical Committee on Nigerian National Tax Policy that high tax administration costs is one of the major challenges facing Nigeria (see McKerchar and Evans, 2009).

In summary, based on the findings above, it was the perception of the respondents that the administrative plan of the Nigerian petroleum tax system was comprehensive and flexible but not cost effective. Therefore, the hypothesis (H1₃) that Nigeria has in place a sound administrative system for petroleum tax matters is accepted for being comprehensive and flexible and rejected for being cost effective.

6.4.4 Implementation processes of the Nigerian petroleum tax system

Implementation of petroleum tax regimes based on economic rent is often faced with difficulties (Guj, 2012). Since the worth of a tax regime rest on how well it is implemented, it is, therefore, imperative that producing nations put in place all necessary measures to ensure that these difficulties are overcome. Thus, in this section the effectiveness of the implementation processes of the Nigerian petroleum tax system were tested using research hypothesis H1₄. The hypothesis, which is based on four statements, is restated below.

H1₄: The implementation processes for Nigeria's petroleum tax system are effective.

Table 6.14 below presents descriptive frequencies of the respondents views on the four statements tested.

Table 6.14: Descriptive statistics relating to implementation processes for Nigeria's petroleum tax system

Statements	M	Md	SA	A	N	D	SD	TR
i) Government support for effective administration:								
• Recruitment of required staff	2.51	2.00	20 (21.7)	37 (40.2)	8 (8.7)	22 (23.9)	5 (5.4)	92 (100)
• Financial support	2.70	2.00	11 (12.0)	37 (40.2)	17 (18.5)	23 (25.0)	4 (4.3)	92 (100)
• Training and development of staff	2.40	2.00	16 (17.4)	43 (46.7)	14 (15.2)	18 (19.6)	1 (1.1)	92 (100)
• Improvement of staff welfare	2.39	2.00	20 (21.7)	39 (42.4)	14 (15.2)	15 (16.3)	4 (4.3)	92 (100)
ii) Adequacy in the finance of petroleum tax agencies:								
• Federal Inland Revenue Services	1.96	2.00	28 (30.4)	47 (51.1)	10 (10.9)	7 (7.6)	-	92 (100)
• Department of Petroleum Resources	2.05	2.00	28 (30.4)	41 (44.6)	13 (14.1)	10 (10.9)	-	92 (100)
• Central Bank of Nigeria	1.68	2.00	43 (46.7)	37 (40.2)	10 (10.9)	2 (2.2)	-	92 (100)
• National Petroleum Managements Services	2.16	2.00	18 (19.6)	50 (54.3)	16 (17.4)	7 (7.6)	1 (1.1)	92 (100)
• Ministry of Petroleum Resources	2.30	2.00	22 (23.9)	40 (43.5)	13 (14.1)	14 (15.2)	3 (3.3)	92 (100)
iii) Features of Nigerian petroleum tax agencies:								
• Appropriate number of petroleum professionals	2.70	3.00	15 (16.3)	24 (26.1)	27 (29.1)	26 (28.3)	-	92 (100)
• Good information system	2.95	3.00	4 (4.3)	34 (37.0)	22 (23.9)	27 (29.3)	5 (5.4)	92 (100)
• Information system linked to other agencies' information systems	3.27	3.00	5 (5.4)	17 (18.5)	30 (32.6)	28 (30.4)	12 (13.0)	92 (100)
• Access to national petroleum database	3.22	3.00	5 (5.4)	24 (26.1)	22 (23.9)	28 (30.4)	13 (14.1)	92 (100)
iv) Nigeria's petroleum tax administrative agencies:								
• Work as an effective team	2.82	3.00	9 (9.8)	34 (37.0)	18 (19.6)	27 (29.3)	4 (4.3)	92 (100)
• Are effective in detecting non-compliance	2.83	3.00	7 (7.6)	37 (40.2)	17 (18.5)	27 (29.3)	4 (4.3)	92 (100)
• Prosecute companies' for non-compliance	3.15	3.00	4 (4.3)	23 (25.0)	31 (33.7)	23 (25.0)	11 (12.0)	92 (100)

Note: i) M=Mean, Md=Median, SA=Strongly Agree, A=Agree, N=Neutral, D=Disagree, SD= Strongly Disagree, TR=Total Responses ii) All figures in brackets are percentages

6.4.4.1 Government support for effective administration of petroleum tax system

This section sought respondents' views on government support for effective administration of the petroleum tax system through: i) recruitment of required staff; ii) financial assistance; iii) staff training and development; and iv) improvement of staff welfare. Government support in these areas is particularly important because having an effective tax administration means generating more revenue, preventing the need for the introduction of higher tax rates, and facilitating an easy way to administer tax laws (Atta-Mills, 2002).

From Table 6.14, 57 (62%) out of the total 92 respondents agreed that the government was supportive in recruiting the required staff for petroleum tax administration while 27 (29%) disagreed, and the remaining 8 were neutral. On average, the respondents were in agreement as indicated by a median score of 2.00. However, investigation of the differences between the groups revealed a number of differences (Table 6.15).

Table 6.15: Test results for government supports for effective administration of Nigerian petroleum tax system

Mann-Whitney Tests					
a) Recruitment of required staff					
Groups		C	A ₁	H	
N ₁		.049	.010	.033	
F		.038	.011		
M ₂		.027	.017	.028	
b) Financial support					
Groups	N ₁	F	M ₁	M ₂	N ₂
A ₁	.037	.033	.011	.016	.037
H			.023	.029	
c) Training and development of staff					
Groups	C	M ₁	A ₁	A ₂	H
N ₁			.049	.033	.006
F	.044	.042	.044	.030	.006
d) Improvement of staff welfare					
Groups	N ₁	F	M ₂	N ₃	
A ₁	.030	.013	.042	.014	

Note: i) Only Mann-Whitney test results with p- values of less than or equal to 0.05 (i.e. $p \leq .05$) are shown in the table

ii) N₁ = Nigerian national petroleum corporation (NNPC), F = Federal Inland Revenue Service (FIRS), C = Central Bank of Nigeria (CBN), M₁ = Ministry of Petroleum Resources (MPR), M₂ = Multinational Oil Companies (MOCs), A₁ = Accountant General's office (AGF), A₂ = Auditor General's office (AGO), N₂ = Nigeria Extractive Industries Transparency Initiative (NEITI), N₃ = National Assembly (NASS), and H = Higher Institution of learning (HIL).

Eight differences were recorded under staff recruitment. The first three differences were between the NNPC and three other groups, namely; CBN, AGF and HIL. The NNPC and all the three groups agreed that the government was supportive in recruiting the required staff for the administration of the petroleum tax system. However, while 53% of the NNPC agreed, 80%, 83% and 84% of the CBN, AGF and HIL agreed respectively. Second, the FIRS also differed with the CBN and AGF.

However, unlike the NNPC, 54% of the respondents from the FIRS held disagreed view. Third, the MOCs differed with the CBN, AGF and HIL. While 50% of the respondents from the MOCs disagreed, more than 80% of the respondents from the CBN, AGF and HIL were in agreement. In spite of the agreements shown by the respondents from the NNPC, CBN, AGF, and HIL, it could be argued that the disagreement by the FIRS and the MOCs were more appropriate because of two main reasons. First, evidence has shown that the Nigeria's main tax institution (i.e. FIRS) is facing a serious challenge of lack of adequate personnel in its tax administrative responsibilities (Salami, 2011). Second, the MOCs have seen the staff capacity of many host countries, and this has placed them in a better position to understand the relative adequacy of the administrative staff strength of the Nigerian petroleum sector.

Financial support for effective administration of petroleum taxation in Nigeria is the second aspect tested. The AGF, with an agreed response of 83%, differed from the FIRS, MPR, MOCs and NEITI who respectively held 54% disagreed, 57% neutral, 50% neutral, and 50 disagreed views. The disagreed view of the FIRS is consistent with the argument that financing of petroleum tax administration is an area that receives less attention from host governments (Calder, 2010). As such, it could be argued that there was no adequate financial support for effective tax administration in Nigeria.

Under training and development of staff, the NNPC held 40% agreed response, 26% neutral and 34% disagreement. This made it to be different from the AGF, AGO and HIL who held 83%, 85% and 84%

agreed response rates respectively. Similarly, the FIRS with a mixed response of 39% agreed, 15% neutral and 46% disagreement differed from the CBN, MPR, AGF, AGO and HIL who held 70%, 71%, 83%, 85%, and 84% agreed views. While the five respondents groups might have based their agreements on government's resolve toward training and development revenue staff (Omoigui-Okauru, 2008), the mixed views of the FIRS might be appropriate because empirical evidence has shown that most of the tax officers in Nigeria do not have up-to-date knowledge of doing their job because of lack of periodic training (Abiola and Asiwah, 2012).

Improvement of staff welfare was the fourth element of support tested, and the result revealed only four differences between the AGF and four other groups, namely, NNPC, FIRS, MOCs and NASS. All the groups agreed that the government was supportive of improving petroleum tax administrative staff. However, while 83% of the respondents from the AGF agreed, 55%, 62%, 50% and 46% of the respondents from the NNPC, FIRS, MOCs and NASS respectively agreed. Government in Nigeria has shown commitment over the years in ensuring that the welfare of revenue staff is improved. A good example is the recent improvement in the remuneration of revenue staff through the approval of new salary as well as the provision of loans to staff to purchase houses (Omoigui-Okauru, 2008). This might be the reason for the agreed views expressed by all the respondents' groups.

The above findings, therefore, suggest the following: i) poor staff recruitment ii) poor financial support iii) inadequate staff training and

development and iv) improved staff welfare. Improving staff welfare clearly motivates staff to achieve higher performance levels, but the overall administrative goal could only be achieved if the required number of staff are recruited and are given the necessary financial support to perform their duties. Since the findings have shown that the government was not supportive in these areas, it is logical to conclude that the research hypothesis H1₄ is rejected in respect of government support for petroleum tax administration in Nigeria.

6.4.4.2 Adequacy in the finance of Nigerian petroleum tax agencies

There are five agencies responsible for the administration of petroleum tax matters in Nigeria. These are: i) Federal Inland Revenue Service; ii) Department of Petroleum Resources; iii) Central Bank of Nigeria; iv) National Petroleum Investment Management Services; and v) Ministry of Petroleum Resources. The respondents' views were asked on the adequacy of government finance to these agencies. Financing tax administration through agencies is very important because it leads to strong incentives to increase revenue collection (Von Haldenwang, 2010), which is particularly important to Nigeria as it heavily depends on oil revenue collections. Accordingly, the research hypothesis H1₅ is tested.

Table 6.16: Mann-Whitney tests for adequacy in the finance of Nigeria petroleum tax agencies

a) Federal Inland Revenue Services						
Groups	F	C	M ₁	M ₂	N ₃	
H	.002	.001	.001	.008	.004	
b) Department of Petroleum Resources						
Groups	F	A ₁	A ₂	N ₃	H	
N ₁		.015	.023	.002		
M ₁						.043
N ₂	.030	.019	.035			.006
N ₃		.011	.014			.002
c) Central Bank of Nigeria						
Groups				N ₁	N ₃	
H				.044	.036	
d) National Petroleum Investment Management Services						
Groups		N ₁	M ₁	M ₂	A ₂	
A ₁		.016				
H		.005	.045	.044	.036	
e) Ministry of Petroleum Resources						
Groups	N ₁	F	C	M ₁	M ₂	N ₃
C	.015	.034		.006		
A ₁	.019	.030		.013		.015
A ₂				.038		
H	.002	.005	.016	.002	.047	.002

Note: i) Only Mann-Whitney test results with p- values of less than or equal to 0.05 (i.e. $p \leq 0.05$) are shown in the table

ii) N₁ = Nigerian national petroleum corporation (NNPC), F = Federal Inland Revenue Service (FIRS), C = Central Bank of Nigeria (CBN), M₁ = Ministry of Petroleum Resources (MPR), M₂ = Multinational Oil Companies (MOCs), A₁ = Accountant General's office (AGF), A₂ = Auditor General's office (AGO), N₂ = Nigeria Extractive Industries Transparency Initiative (NEITI), N₃ = National Assembly (NASS), and H = Higher Institution of learning (HIL).

From Table 6.14, the respondents, with a mean score of between 1.68 and 2.30, agreed that all the agencies were adequately financed by the government. The differences between them are presented in Table 6.16.

There were five differences between the groups relating to FIRS. These differences, which relates to the extent of agreement, were between the HIL, which held 100% agreed response, and the FIRS, CBN, MPR, MOCs and NASS that respectively held 85%, 70%, 86%, 68%, and 91% agreed responses.

In relation to the DPR, a number of differences were recorded. First, the NNPC with 60% agreement differed in strength of agreement from the AGF and AGO who held 100% and 86% agreed response respectively. Second, the MPR's also differed from the NASS in the strength of agreement with 71% agreed response as against NASS's 64% agreement. Third, the NEITI with 50% disagreement differed from the FIRS, AGF, AGO and HIL that respectively held over 85% agreement.

Regarding the CBN, the HIL differed from the NNPC and NASS. While 100% of the respondents from the HIL agreed that the CBN was adequately financed, 86% and 90% of the respondents from the NNPC and NASS agreed respectively.

Under NAPIMS, the AGF held 100% agreement that the NAPIMS was adequately financed as against 60% agreement from the NNPC. Similarly, the HIL, with 84% agreement differed, on one hand, from the MPR and AGO that held agreed response of 71% each and the MOCs who held 67% neutral response, on the other hand.

Many differences were recorded between the groups concerning the MPR. First, the CBN, AGF and HIL held 90%, 83% and 92% views that the MPR was adequately financed while only 53% and 62% of the NNPC and FIRS agreed. Second, the MOCs and NASS with 50% and 64% agreement

respectively differed from the HIL. While all these differences were due to strength of agreement, the MPR differed from the CBN, AGF, AGO and HIL with a mixed response of 29% each for agreement, neutral and disagreement.

It is clear from the above analysis that most of the respondents' held the perception that government finance for all the five administrative agencies was adequate. The groups' agreements might be based on the relatively large budgetary allocations to these agencies over the years (Budget of the Federation, 2012). This suggests the government's desire for making these agencies effective in order to boost revenue generation consistent with the argument that financing tax administration through agencies leads to strong incentives to increase revenue collection (Von Haldenwang, 2010). Hence, the research hypothesis H1₄ is accepted in relation to this statement.

6.4.4.3 Possession of required features by Nigerian petroleum tax administrative agencies for ensuring successful administration

This section sought the respondents views as to whether the Nigerian petroleum tax agencies possess four important features that are fundamental for ensuring successful administration: i) appropriate number of petroleum tax professionals; ii) good information systems; iii) an information system that is linked to other agencies' information systems; and iv) access to a national petroleum tax database. In order to extensively capture the respondents' views on this aspect, space was provided in the questionnaire to enable the respondents to make any

additional comments on any of the agencies. The additional comments, which came from very few respondents, were not captured as variables in the code sheet for reasons stated in Chapter 5 and are, therefore, presented and analysed here.

These features are particularly important to the success of administering agencies. First, the presence of appropriate tax professionals is fundamental in making the MOCs fully understand and comply with the nation's petroleum tax regulations⁶⁷. Second, good information systems enable tax administrative agencies to reduce processing times, make rapid adjustments to administrative procedures, and grant greater flexibility to operations, all of which translate into increased effectiveness (Gutierrez, 2002). Third, information system interconnectivity, Gutierrez (2002) further noted, enables immediate access to each other's database and the immediate crossing of transactions for verification, for example. Fourth, access to a national database allows the agencies to have a complete picture of the nation's petroleum system and, where necessary, make adjustments to the records on their database.

From Table 6.14, the respondents were on average neutral in respect of all the four features. First, only 42% of the respondents were in agreement that an appropriate number of petroleum tax professionals exist in Nigeria's petroleum tax administrative agencies. With 29% of the respondents being neutral and another 28% disagreeing, the overall median score turns out to be 3.00 (neutral). Second, in terms of good information systems, the result also showed 41% agreed, 24% neutral

⁶⁷ Tax professionals give advice on various tax matters and are not meant to be accountants only. They could be lawyers, auditors, or economists and each of which may be subject to independent regulations of his/her profession.

and 35% disagreed. This distribution led to a mean score of 2.95 and a median score of 3.00 meaning the respondents were again neutral as to the existence of good information systems in those agencies. Third, with a third (33%) of the respondents chosen to be neutral and only 24% in agreement, the respondents' perception of the existence of interconnectivity of information system among the groups resulted in mean and median scores of 3.27 and 3.00 (neutral). Fourth, access to national petroleum database was also no different from the three other features. The respondents consistently maintained a neutral position with a median score of 3.00.

The overall neutral positions of the respondents are further confirmed by the various comments the respondents made on the issue. One respondent, while expressing his/her view about the existence of database in the administrative agencies commented thus:

"I do not think that there is a comprehensive petroleum tax database maintained by any of the agencies."

This uncertainty about the existence of an appropriate database made some respondents conclude that Nigeria's drive for an appropriate petroleum tax system is far from being attainable. A respondent from the CBN, for example, asserted that:

"We lack an adequate database on daily petroleum production in Nigeria. We can't have an appropriate petroleum tax regime without a credible database."

Similarly, while a majority of the respondents did not comment on the presence of an appropriate number of petroleum tax professionals, a respondent from FIRS summed up the respondents neutral position thus:

“The Federal Inland Revenue Service is perhaps the only agency amongst the listed that boast an appropriate number of petroleum tax professionals”

Just as in the case of all the variables above, Mann-Whitney tests were run to determine the differences between the groups (Table 6.17)

Table 6.17: Mann-Whitney tests for required features for ensuring administrative success

a) Appropriate number of petroleum tax professionals							
Groups	N ₁	C	M ₁	A ₁	N ₃	H	
C	.038		.014		.008		
M ₂		.002		.030		.038	
b) Good information system							
Groups				A ₁	A ₂	N ₃	H
N ₁				.008		.039	.019
M ₁				.011	.050	.043	.031
N ₂				.016	.047	.038	.032
c) Interconnectivity of information system							
Groups	N ₁	C	M ₁	M ₂	N ₂	N ₃	H
A ₁	.010				.016	.015	
N ₂		.040	.014	.048			
d) Access to national petroleum database							
Groups	C	M ₁	M ₂	A ₁	A ₂	N ₃	H
N ₁	.025			.026	.031		.021
A ₁		.038				.019	
A ₂		.047				.034	
N ₂	.017		.048	.017	.017	.025	.019
H		.045				.038	

Note: i) Only Mann-Whitney test results with p- values of less than or equal to 0.05 (i.e. $p \leq .05$) are shown in the table

ii) N₁ = Nigerian national petroleum corporation (NNPC), F = Federal Inland Revenue Service (FIRS), C = Central Bank of Nigeria (CBN), M₁ = Ministry of Petroleum Resources (MPR), M₂ = Multinational Oil Companies (MOCs), A₁ = Accountant General’s office (AGF), A₂ = Auditor General’s office (AGO), N₂ = Nigeria Extractive Industries Transparency Initiative (NEITI), N₃ = National Assembly (NASS), and H = Higher Institution of learning (HIL).

The CBN, in relation to an appropriate number of tax professionals, differed from the NNPC, MPR and NASS. The CBN held 80% agreed response while the NNPC and MPR held mixed responses of between 29

and 33% for agree, neutral and disagree. The MOCs, on the other hand, were 50% neutral and 50% disagreed. This made it to be different from the AGF and HIL that held 67% neutral and 60% agreed responses respectively. Although 80% of the respondents from the CBN agreed, it is difficult to argue that there were an appropriate number of petroleum tax professionals as most of the other groups, who are equally administrative agencies, held mixed responses. This argument is consistent with Ewenpu (2010) and Odusola (2006) findings that inadequate professional manpower is one of the major problems that tax authorities in Nigeria are facing in service delivery.

Possession of a good information system is also another feature that is required for successful administration of the tax system. Under this feature, the NNPC differed from the AGF, NASS and HIL. 60% of the respondents from the NNPC disagreed while 67%, 62% and 46% of the AGF, HIL and NASS agreed respectively. The MPR and the NEITI, with 71% and 75% disagreement, also differed from the AGF, AGO, NASS and HIL. Most developing countries, unlike their developed counterparts, do not have a good database for tax matters. This is also true in relation to Nigeria as a study conducted by Abiola and Asiwah (2012) revealed that Nigeria does not possess a comprehensive database for tax matters.

In terms of interconnectivity of the information system of the administrative agencies, 67% of the respondents from the AGF agreed that the information systems were interconnected. In contrast, 53%, 100% and 55% of the respondents from the NNPC, NEITI and NASS disagreed. On the other hand, the NEITI respondents differed from five

groups, namely; CBN, MPR, and MOCs who held 50% agreed, 71% neutral, 50 neutral respectively. Going by Abiola and Asiweh's (2012) findings that Nigeria does not have a comprehensive tax database, it is difficult to argue that the information systems of the agencies were interconnected. This possibly explains the neutral views of the respondents.

The groups recorded greater differences in responses between themselves in relation to the agencies access to national petroleum database. First, the NNPC, with 53% disagreement, differed from the CBN, AGF and HIL which respectively held agreed responses of 60%, 50% and 54%. Second, the AGF and AGO each differed with the MPR and NASS which held 57% and 64% disagreed responses respectively. Third, with 100% disagreed view, the NEITI differed from the responses of the CBN, MOCs, AGF, AGO, NASS and HIL. Since it was the respondents perceived that Nigeria does not have a comprehensive tax database, as noted above, it will be difficult to argue that the agencies were effectively accessing the nation's tax database. Therefore, the disagreement by the NNPC, MPR, NASS, and NEITI is more appropriate.

From the findings above it could be argued that the neutral views of the respondents were indications of lack of all the four features by Nigerian petroleum tax agencies for effective administration. Hence, the hypothesis H1₄ is rejected in relation to this statement.

6.4.4.4 Relationship and capacity of Nigeria's petroleum tax administrative agencies

In this section, the respondents' views on the relationship and capacity of the petroleum tax agencies in Nigeria relating to: i) effective team work; ii) detection of non-compliance; and iii) prosecution of companies for non-compliance were tested. As in section 6.4.2.4, space was allowed for the respondents to make free comments on any of the agencies.

The rationale for asking this question is:

First, teamwork is imperative where more than one agency is vested with responsibility of administering a tax system because it leads to improved service delivery, joint problem solving and increased understanding and trust between or among the agencies (Atkinson et al, 2007).

Second, an understanding of the abilities of the Nigerian petroleum tax administrative agencies in the detection of non-compliance with tax regulations is important for meeting the needs of the nation because evidence has shown that the estimated revenue loss worldwide as a result of non-compliance with tax regulations is substantial and is seen to inflict a real cost on society as a whole (Collins et al, 1990; Andreoni et al, 1998).

Third, prosecution of defaulters is an important tool for ensuring that defaulters are punished and a signal to other players in the industry of the consequences of non-compliance.

From Table 6.14, 47% of the total respondents agreed that the petroleum tax agencies were working as an effective team. Of the remaining percentage, 20% were neutral while 33% disagreed. Overall, the groups were neutral (mean = 2.82 and median = 3.00). Similarly, the respondents expressed mixed views in relation to the agencies' ability to detect non-compliance with tax regulations: 48% agreed, 19% were neutral and 33% disagreed. With a mean score of 2.83 and median score of 3.00, the respondents were neutral. Furthermore, the respondents were also neutral (mean = 3.15) in terms of the agencies' ability to prosecute the MOCs for non-compliance.

Table 6.18: Mann-Whitney tests for the functions of Nigeria's petroleum tax administrative agencies

a) Effective team work					
Groups	F	C	A₁	A₂	H
M₁	.049	.010		.002	.005
M₂	.033	.009		.002	.004
N₃		.011	.002		.004
b) Detection of non-compliance					
Groups	F	C	M₂	A₁	H
N₃	.031	.009	.020	.003	.030
c) Prosecution for non-compliance					
Groups	F	M₁	A₁	H	
N₁	.015		.033	.013	
A₂	.047			.042	
N₃	.008	.040	.007	.003	

- Note:** i) Only Mann-Whitney test results with p- values of less than or equal to 0.05 (i.e. $p \leq .05$) are shown in the table
 ii) N₁ = Nigerian national petroleum corporation (NNPC), F = Federal Inland Revenue Service (FIRS), C = Central Bank of Nigeria (CBN), M₁ = Ministry of Petroleum Resources (MPR), M₂ = Multinational Oil Companies (MOCs), A₁ = Accountant General's office (AGF), A₂ = Auditor General's office (AGO), N₂ = Nigeria Extractive Industries Transparency Initiative (NEITI), N₃ = National Assembly (NASS), and H = Higher Institution of learning (HIL).

From Table 6.18, the MPR and MOCs differed from four groups, namely, FIRS, CBN, AGO and HIL. 57% and 67% of the MPR and MOCs respectively disagreed that the administrative agencies were working as an effective team. On the other hand, 69%, 60%, 86% and 77% of the respondents respectively from the four groups agreed. Meanwhile, the NASS with 46% neutral and 46% disagreed response differed from the CBN, AGF and HIL. Although most of the groups agreed, the disagreement by some of the agencies, especially the MPR, being one of the administrative agencies, has put the effectiveness of the agencies' team work into question because effective team work entails, among other things; "a sense of common ownership of the task at hand and joint responsibility for its achievement" as well as a "co-ordinated effort and planned sharing of tasks evenly across the team" (Macmillan, 2011:5). Since the MPR was disagreeing, it means there was neither a sense of joint responsibility nor coordinated effort among the agencies, which in turn implies lack of effectiveness in team work among the agencies.

Under detection of non-compliance, 65% of the NASS disagreed that the agencies' were effective while 54%, 70%, 67%, 83% and 54% of the FIRS, CBN, MOCs, AGF and HIL agreed. Other groups, including the NNPC and the MPR, that did not differ between themselves shared mixed views with not more than 33% of the respondents in each group were either in agreement, neutral or in disagreement. The agreement by most of the groups might be more correct because Nigeria has recently disclosed that it has uncovered \$8.8 billion of underpaid royalties which had not been detected by the petroleum tax agencies between 1999 and

2008 (Olorokor, 2012). This evidence, therefore, suggests that the petroleum tax agencies were ineffective in the detection of non-compliance.

The groups also differed in relation to prosecution of the MOCs for non-compliance with tax regulations. First, with 53% disagreed response rate, the NNPC differed from the FIRS, AGF and HIL which were 62% agree, 67% neutral and 46% agree respectively. Second, the NASS with 64% disagreed response rate also differed from the FIRS, AGF and HIL. Third, the AGO differed from the FIRS and HIL with 57% disagreed view. Although, on average, the groups were neutral, there was no evidence suggesting that the MOCs were being prosecuted for non-compliance in Nigeria despite the reported cases of tax evasion (Ezigbo, 2010; Olorokor, 2012). Hence, agencies might not be effective in prosecuting the MOCs.

From the findings above, it is evident that the administrative agencies were not working as an effective team and did not have the capacity to detect and prosecute the MOCs for non-compliance with tax regulations. Hence, the hypothesis H1₄ is rejected in relation to this statement.

6.4.5 Petroleum tax compliance

This part of the analysis relates to hypothesis H1₅. The hypothesis, which was developed on two statements, is restated below:

H1₅: The compliance mechanisms relating to the Nigerian petroleum tax system are adequate.

Table 6.19 presents the descriptive statistics of the respondents' views on the two statements relating to the adequacy of the compliance mechanisms of the Nigerian petroleum tax system.

Table 6.19: Descriptive statistics relating to adequacy of the control mechanisms of the Nigerian petroleum tax system

Statements	M	Md	SA	A	N	D	SD	TR
i) Features designed to assist compliance:								
• A clear statement of purpose of the tax regulation	2.42	2.00	12 (13.0)	48 (52.2)	18 (19.6)	9 (9.8)	5 (5.4)	92 (100)
• Capacity for regular review of the tax regulations	2.75	3.00	9 (9.8)	35 (38.0)	20 (21.7)	26 (28.3)	2 (2.2)	92 (100)
• Capacity for timely review of the tax regulation	2.84	3.00	10 (10.9)	32 (34.8)	19 (20.7)	25 (27.2)	6 (6.5)	92 (100)
• Database for petroleum taxes paid	2.35	2.00	24 (26.1)	35 (38.0)	13 (14.1)	17 (18.5)	3 (3.3)	92 (100)
• Adequate numbers of government petroleum taxation experts	2.59	2.00	18 (19.6)	31 (33.7)	20 (21.7)	17 (18.5)	6 (6.5)	92 (100)
• Tax officials' adequate knowledge of the oil industry	2.41	2.00	28 (30.4)	26 (28.3)	16 (17.4)	16 (17.4)	6 (6.5)	92 (100)
ii) Policies for fast payment of petroleum taxes.								
• Self-assessment of tax liabilities	2.27	2.00	18 (19.6)	47 (51.1)	12 (13.0)	14 (15.2)	1 (1.1)	92 (100)
• Monthly instalment payments for tax liabilities	2.32	2.00	17 (18.5)	44 (47.8)	20 (21.7)	7 (7.6)	4 (4.3)	92 (100)
• Penalties for late payment	2.40	2.00	26 (28.3)	31 (33.7)	11 (12.0)	20 (21.7)	4 (4.3)	92 (100)

Note: i) M=Mean, Md=Median, SA=Strongly Agree, A=Agree, N=Neutral, D=Disagree, SD= Strongly Disagree, TR=Total Responses ii) All figures in brackets are percentages

6.4.5.1 Features designed to assist petroleum tax compliance

This section tested the respondents' views on whether the Nigerian petroleum tax system possesses features that can assist in compliance with tax regulations. Specifically, six features were tested: i) a clear statement of the purpose of the tax regulation; ii) capacity for regular

review of the tax regulation; iii) capacity for timely review of the tax regulation; iv) existence of a database for petroleum taxes paid; v) adequate numbers of government petroleum taxation experts; and vi) tax officials' adequate knowledge of the oil industry.

These attributes are important for effective compliance with any tax system. First, a clear statement of purpose is fundamental because the effectiveness of tax regulations is enhanced if its wordings are: i) meaningful; ii) intelligible; and iii) well thought out and organised (Thuronyi, 1996). Thuronyi (1996) further noted that the easier the tax regulations are understood, the lower will be the costs of compliance for tax administrators. Second, regular and timely review of tax regulations has the potential of improving tax administration to make it more responsive and reliable (Ogbonna and Ebimobowei, 2012). Third, the presence of a database for petroleum tax paid is essential in tracking MOCs tax payments records. Not only that, it also allows the administrative agencies to manage mass information relating to petroleum taxes paid. Fourth, the adequacy of government petroleum taxation experts is fundamental in ensuring that attempts by the MOCs to legally avoid compliance with tax regulations are uncovered and timely dealt with. Fifth, tax officials' sound knowledge of the petroleum industry will arguably raise the MOCs' conscience in their dealings with revenue agencies.

From Table 6.19, 65% of the respondents were of the view that Nigeria's petroleum tax system has a clear statement of purpose while 15% of them disagreed. This gave a mean score of 2.42 (agreed). The

respondents' view on the tax system's capacity for a regular review was mixed: 44 out of the 92 respondents, representing 48%, agreed, 20 (22%) neutral and 28 (30%) disagreed. Overall the respondents were neutral (median = 3.00). Similarly, the tax system's capacity for timely review indicated an overall mean score of 2.84 and a median score of 3.00 as suggested by respondents mixed view of 46% agreed, 21% neutral and 33% disagreed. Furthermore, 64% of the respondents agreed that there was a database of taxes paid in place while 22% of them disagreed. On average, the respondents were in agreement (median = 2.00).

Table 6.20 presents the Mann-Whitney tests results for the differences between the respondents groups relating to all the features designed to assist compliance with the petroleum tax regulations.

Table 6.20: Mann-Whitney tests for features designed to assist petroleum tax compliance

a) A clear statement of purpose of the tax regulation									
Groups	F	C	M ₂	A ₂	N ₂	N ₃	H		
N ₁	.013				.014		.029		
M ₁	.017	.023		.030	.009	.031	.017		
N ₂		.033	.040						
b) Capacity for regular review of the tax regulation									
Groups	N ₁	C	M ₁	A ₁	A ₂	N ₂	H		
N ₁		.002		.005	.004	.037	.000		
F	.012		.043	.046					
M ₁		.011		.016	.015		.003		
N ₃				.016			.038		
c) Capacity for timely review of the tax regulation									
Groups	N ₁	F	C	M ₁	M ₂	A ₂	N ₃	H	
N ₁			.032		.038	.018		.027	
M ₁			.044		.028	.015		.036	
A ₁	.007	.033		.016			.018		
d) Database for petroleum taxes paid									
Groups					N ₁	A ₁	A ₂		
F					.046	.030			
N ₃							.044		
e) Tax officials' adequate knowledge of the oil industry									
Groups								F	
N ₂								.031	

- Note:** i) Only Mann-Whitney test results with p- values of less than or equal to 0.05 (i.e. $p \leq .05$) are shown in the table
 ii) N₁ = Nigerian national petroleum corporation (NNPC), F = Federal Inland Revenue Service (FIRS), C = Central Bank of Nigeria (CBN), M₁ = Ministry of Petroleum Resources (MPR), M₂ = Multinational Oil Companies (MOCs), A₁ = Accountant General's office (AGF), A₂ = Auditor General's office (AGO), N₂ = Nigeria Extractive Industries Transparency Initiative (NEITI), N₃ = National Assembly (NASS), and H = Higher Institution of learning (HIL).

A number of differences were recorded between the groups regarding Nigeria's petroleum tax system's clear statement of purpose (Table 6.20). First, with 47% agreed response, the NNPC differed in strength of agreement from the FIRS, NEITI and HIL who were 85%, 100% and 77% in agreement respectively. Second, the MPR held a 71% neutral view

making it different from the FIRS, CBN, AGO, NEITI, NASS and HIL, all of which held more than a 65% agreed response rate. For a tax system to have a clear statement of purpose it must be readable, relevant, and rigorous (Luttman, 2006)⁶⁸. All these features are arguably met by the Nigeria petroleum tax system as evident from the review in Chapter 3.

In terms of a tax system's capacity for a regular review, there were also some differences between the groups (Table 6.20). First, 53% of the NNPC disagreed while 70%, 83%, 71, 75% and 69% respectively of the CBN, AGF, AGO, NEITI and HIL agreed. Second, the FIRS, with 62% agreed view, differed from the NNPC and MPR who were 53% and 57% in disagreement respectively. The disagreement by the NNPC and MPR might not be appropriate because, over the years, as discussed earlier in Section 3.2, series of reforms were made in Nigeria, and currently a bill, called "petroleum industry bill (PIB)", for the amendment of the existing regulations is before the national assembly.

An investigation of the differences between the groups relating to the capacity of the tax system for a timely review revealed that the NNPC and MPR held 47%, and 57% disagreement that the tax system has the capacity for timely review. On the other hand, the CBN, MOCs, AGO, HIL and AGF held more than 60% agreement that the system has the capacity for a timely review. Considering the fact that the government's desire for a holistic overhaul of the nation's petroleum sector via the PIB, which started since 2008, is still being debated in National Assembly, it

⁶⁸ A tax system is readable if it is concise and easily understood, it is relevant if it is directly related to substantive issues in the tax system, and rigorous if it meticulously follow the principles of sound design and implementation (Luttman, 2006).

could be argued that the tax system lacks the capacity for a timely review.

The differences relating to database of taxes paid indicated that the FIRS and AGF held 85% and 67% agreed views while the NNPC held a 40% disagreed response. As the FIRS and AGF are the two institutions in Nigeria that are respectively responsible for collection and disbursement of the nation's funds (see Section 3.6.2), it can be argued that their agreement was appropriate because without a database for taxes paid it would be difficult, particularly for the AGF, to ascertain the correct amount collected in a given month.

In terms of tax official's adequate knowledge of the oil industry, 59% of the respondents agreed while 24% disagreed. With a mean of 2.41 and a median score of 2.00, the respondents were averagely in agreement. Mann-Whitney tests for the difference between the groups' revealed only one difference between the NEITI and FIRS in which 50% of NEITI disagreed as against 84% agreement by the FIRS.

From the findings above, it is clear from the perception of the respondents that the Nigerian petroleum tax system has a clear statement of purpose, capacity for regular review, database for taxes paid, and tax officials with adequate knowledge of the petroleum industry. It was, however, the view of respondents that the tax system lacks the capacity for a timely review. Therefore, except for capacity for timely review, the research hypothesis H1₅ is accepted with regard to this statement.

6.4.5.2 Tax policies for fast payment of petroleum taxes in Nigeria

This section analyse the respondents opinions on the effectiveness of three petroleum tax policies in ensuring prompt payment of petroleum taxes. These policies were: self-assessment of tax liabilities, monthly instalment payments of tax liabilities, and penalties for late payment. This question is important for at least three reasons. First, the responsibility for calculating relevant tax liability and meeting the requirement for payment are shifted, under self-assessment, to the taxpayer (Barr et al, 1977). Knowledge of how this encourages compliance is important for meeting the objective of this study. Second, monthly instalment payment of tax liabilities reliefs the MOCs from excessive cash outflow but at the same time reminds them of their obligation to pay within 30 days or be fined. Respondents view on the effectiveness of policy is important to this study. Third, imposition of penalties is a common tool for encouraging compliance. How effective penalties for late payments in Nigeria in encouraging compliance is also important to this study.

The descriptive statistics of the respondents from Table 6.19 indicates that 71% of the respondents agreed that Nigeria's self-assessment system was effective in ensuring compliance with the petroleum tax regulations. This gave a mean score of 2.27 (agreed). The respondents, just as in relation to self-assessment, were in agreement that the monthly instalment payment of tax liabilities was an effective mechanism for ensuring compliance with tax regulations. Under penalties for late

payment, 62% of the respondents agreed while 26% disagreed. With a mean score of 2.40, the respondents, on average, agreed that penalties were effective mechanisms for prompt payment of tax. Differences between the groups are presented in Table 6.21.

Table 6.21: Mann-Whitney tests for tax policies for fast payment of petroleum taxes

a) Self-assessment of tax liabilities							
Groups	N₁	M₂	N₃				
F	.008	.026	.010				
A₁	.027	.031	.018				
A₂	.046	.036	.026				
b) Monthly instalment payments of tax liabilities							
Groups	N₁	C	N₃				
C	.037						
M₂		.021	.049				
c) Penalties for late payment							
Groups	N₁	F	C	M₂	A₂	N₃	H
M₁		.027		.015			.026
M₂			.036		.029		
A₁	.028	.006	.018	.004		.013	.006

Note: i) Only Mann-Whitney test results with p- values of less than or equal to 0.05 (i.e. $p \leq .05$) are shown in the table

ii) N₁ = Nigerian national petroleum corporation (NNPC), F = Federal Inland Revenue Service (FIRS), C = Central Bank of Nigeria (CBN), M₁ = Ministry of Petroleum Resources (MPR), M₂ = Multinational Oil Companies (MOCs), A₁ = Accountant General's office (AGF), A₂ = Auditor General's office (AGO), N₂ = Nigeria Extractive Industries Transparency Initiative (NEITI), N₃ = National Assembly (NASS), and H = Higher Institution of learning (HIL).

From Table 6.21, the differences between the groups for self-assessment revealed that the FIRS, AGF and AGO each differed from the NNPC, MOCs and NASS. The differences relate to the strength of agreement in which more than 80% of the respondents from the FIRS, AGF and AGO agreed as against 53%, 50% and 55% agreed response held respectively by the NNPC, MOCs and NASS. The agreed view of the respondents might be

based on the findings that the practice of self assessment in Nigeria resulted not only in increase in revenue collection but also in effective partnership between the taxpayers and the tax officials (Onyegbule, 2012) consistent with self assessment's main objective of encouraging voluntary compliance and efficient tax administration (Palil, 2010).

Three differences were reported between the groups in terms of monthly instalment payment of tax liabilities. The first difference, which relates to strength of agreement, showed that the CBN held 90% agreed view while the NNPC held 53% agreed view. The other two differences were between MOCs and the CBN and NASS. 67% of the respondents from MOCs were neutral while 90% and 82% respectively from the CBN and NASS agreed. All petroleum taxes due to the government were first paid by the MOCs into an offshore account maintained by the CBN (see Section 3.6.2). Therefore, the CBN's agreement was a confirmation that MOCs were paying their tax liabilities.

A number of differences were found between the respondents in terms of penalties for late payment of taxes. First, the MPR shared different views with the FIRS, MOCs and HIL: 86% of the respondents from the MPR agreed while about 50% of the respondents from each of the three groups disagreed. Second, the MOCs disagreed with the CBN and AGO who held 80% and 85% agreed views. Third, with 100% agreed response, the AGF held a different view with the NNPC who held 47% agreed, 27 neutral, and 27% disagreed view. Although penalties for late payment of taxes are employed across the world, in the case of Nigeria there is arguably no evidence suggesting that the MOCs were penalised

for late payment of tax liabilities. This might suggest that the penalties were effective in making the MOCs comply with tax regulations.

On the basis of the findings above, it can be concluded that the respondents perceived all the three policies to be effective in encouraging fast payment of petroleum taxes. Hence, hypothesis H1₅ is accepted in relation to this statement.

6.4.6 Flexibility of the Nigerian petroleum tax system

This section tested the sixth hypothesis of the study (i.e. hypothesis H1₆). Specifically, the analysis relates to section five of the study questionnaire in which the respondents' views were asked on the ability of the Nigerian petroleum tax system to adjust to changes in conditions in the industry that were likely to affect the credibility of the tax system.

H1₆: The Nigerian petroleum tax system is reactive to changes in factors that significantly affect tax matters

Descriptive statistics of the five statements relating to the flexibility of the Nigerian petroleum tax system as covered by hypothesis H1₆ are presented in Table 6.22.

Table 6.22: Descriptive statistics relating to flexibility of the Nigerian petroleum tax system

Statements	M	Md	SA	A	N	D	SD	TR
i) Capacity to adjust to the following situations: • Changes in tax regulations in other countries	2.83	3.00	8 (8.7)	35 (38.0)	20 (21.7)	23 (25.0)	6 (6.5)	92 (100)
• Increase in investors risk of making loss	2.98	3.00	3 (3.3)	27 (29.3)	33 (35.9)	27 (29.3)	2 (2.2)	92 (100)
ii) Nigerian petroleum tax system is designed to achieve an: • Increase in government take when the profitability of oil companies' increases	2.10	2.00	30 (32.6)	37 (40.2)	13 (14.2)	10 (10.9)	2 (2.2)	92 (100)
• Decrease government take when the profitability of oil companies' decreases	2.90	3.00	12 (13.0)	29 (31.5)	19 (20.7)	20 (21.7)	12 (13.0)	92 (100)
iii) Control mechanism in the Nigerian petroleum tax system is likely to detect: • Fraudulent practices by tax officials	2.60	2.00	15 (16.3)	39 (42.4)	13 (14.1)	18 (19.6)	7 (7.6)	92 (100)
• Underreporting of production volume by multinational oil companies	2.89	3.00	16 (17.4)	29 (31.5)	12 (13.0)	19 (20.7)	16 (17.4)	92 (100)
iv) The Nigerian petroleum tax system is designed to cope with the following conditions: • MOCs fear that government might not honour contract terms in the long run	2.68	2.00	7 (7.6)	44 (47.8)	15 (16.3)	23 (25.0)	3 (3.3)	92 (100)
• Public concern that multinational oil companies are receiving too great a share of the oil revenue	2.39	2.00	20 (21.7)	37 (40.2)	16 (17.4)	17 (18.5)	2 (2.2)	92 (100)
v) The Nigerian government reacts appropriately to: • Requests for a greater share of oil rent by communities in the oil region	2.98	3.00	9 (9.8)	28 (30.4)	18 (19.6)	30 (32.6)	7 (7.6)	92 (100)
• Requests for compensation by communities in the oil region for damages to their environment	2.75	3.00	16 (17.4)	29 (31.5)	13 (14.1)	30 (32.6)	4 (4.3)	92 (100)

Note: i) M=Mean, Md=Median, SA=Strongly Agree, A=Agree, N=Neutral, D=Disagree, SD= Strongly Disagree, TR=Total Responses ii) All figures in brackets are percentages

6.4.6.1 Capacity to adjust to changes in tax regulations in other countries and increase in MOCs risk of making loss

In this section, the respondents' views on the ability of the petroleum tax system to adjust itself to changes in two important issues affecting the international competitiveness of a Nigeria's petroleum tax system were asked: i) changes in tax regulations of other countries and ii) increase in MOCs risk of making a loss. Respondents' views on these issues are very important in understanding the relative strength of the Nigerian petroleum tax system particularly in the developing world where governments are doing everything possible to attract as much foreign direction investment as possible.

From Table 6.22, respondents' views on changes in tax regulations of other countries attracted 47% agreement, 22% neutral and 31% disagreement of the total respondents. With mean and median scores of 2.83 and 3.00 respectively, the respondents were undecided on average. Similarly, the respondents were neutral (median = 3.00) in relation to the ability of the Nigerian petroleum tax system to adjust to increase in MOCs risk of making a loss.

Table 6.23: Mann-Whitney tests for changes in tax regulations in other countries and increase in MOCs risk

a) changes in tax regulations of other countries					
Groups	C	M ₂	A ₁	N ₃	H
N ₁	.018	.016	.026	.005	.012
b) increase in MOCs risk of making loss					
Groups	N ₁	M ₁	M ₂		
N ₃	.025	.026	.032		

- Note:** i) Only Mann-Whitney test results with p- values of less than or equal to 0.05 (i.e. $p \leq .05$) are shown in the table
ii) N₁ = Nigerian national petroleum corporation (NNPC), F = Federal Inland Revenue Service (FIRS), C = Central Bank of Nigeria (CBN), M₁ = Ministry of Petroleum Resources (MPR), M₂ = Multinational Oil Companies (MOCs), A₁ = Accountant General's office (AGF), A₂ = Auditor General's office (AGO), N₂ = Nigeria Extractive Industries Transparency Initiative (NEITI), N₃ = National Assembly (NASS), and H = Higher Institution of learning (HIL).

From Table 6.23, 53% of the NNPC disagreed that the Nigerian petroleum tax system has the ability to adjust to changes in tax regulations in other countries. This made it to be different from the CBN, NASS, HIL and MOCs who respectively held 70%, 73%, 62% and 50% agreed views. As discussed in Section 2.4.1, designing a tax regime requires the understanding of the system in other countries. A tax system that is far out in line with what is obtained in other countries has the potential of making the MOCs divert their investments elsewhere (Daniel, 2004). As evidence has now shown that many MOCs are operating in Nigeria, it could be argued that the Nigerian tax system is sensitive to changes in tax regulations in other countries.

Differences between the groups in relation to the ability of the Nigerian petroleum tax system to adjust to increase in MOCs risk of making loss revealed that the NASS differed from the NNPC, MPR and MOCs. 55% of

the respondents from the NASS perceived that the tax system has the ability to adjust to investors' risk of making a loss. On the other hand, 53% and 71% of the NNPC and MPR were neutral while the MOCs were 67% in disagreement. The disagreement by the MOCs might not be correct because, as discussed in Section 3.2, the government had taken many steps, including the provision of guaranteed minimum profit, to ensure that the MOCs' exposure to risk of making loss is reduced. Hence, it could be argued that the tax system was responsive to the increase in the risk of the MOCs.

On the basis of the above analysis, the research hypothesis H₁₆ is accepted for both changes in tax regulations of other countries and for an increase in MOCs risk of making a loss.

6.4.6.2 Nigerian petroleum tax's ability to adjust government share of petroleum for changes in the profitability of the MOCs.

In this section, the respondents' views were sought on the ability of the Nigerian petroleum tax system to increase government take when the profitability of the MOCs' increases and vice versa. This question is important because having this flexibility built-in into the tax system is likely to address the controversies surrounding profit sharing which Otto et al (2006:Xi) put thus:

"In matters of mining taxation, governments rarely believe that companies pay too much tax; companies rarely believe that they pay too little tax; and citizens rarely believe that they actually see tangible benefits from the taxes that are paid".

Analysis of the median scores and response frequencies revealed an interesting finding. With a positive response of over 73% of the total respondents and a median score of 2.00, the groups were of the opinion that the Nigerian petroleum tax system has the capacity of increasing government share of petroleum revenue as the profitability of the MOCs increases. This is consistent with the evidence that as petroleum fiscal system matures the revenue regimes become more progressive (Sunley et al, 2002).

Mann-Whitney tests to determine the differences between the groups are presented in Table 6.24.

Table 6.24: Mann-Whitney tests for petroleum tax's ability to adjust government share of petroleum revenue

a) increase in government take when the profitability of oil companies' increases				
Groups	N ₁	C	N ₃	
A ₁	.016	.015	.011	
b) decrease in government take when the profitability of oil companies' decreases				
Groups	C	M ₁	A ₁	N ₃
N ₁	.037	.007	.037	.043
M ₂		.026		
A ₂	.033	.006	.034	.043

Note: i) Only Mann-Whitney test results with p- values of less than or equal to 0.05 (i.e. $p \leq .05$) are shown in the table
 ii) N₁ = Nigerian national petroleum corporation (NNPC), F = Federal Inland Revenue Service (FIRS), C = Central Bank of Nigeria (CBN), M₁ = Ministry of Petroleum Resources (MPR), M₂ = Multinational Oil Companies (MOCs), A₁ = Accountant General's office (AGF), A₂ = Auditor General's office (AGO), N₂ = Nigeria Extractive Industries Transparency Initiative (NEITI), N₃ = National Assembly (NASS), and H = Higher Institution of learning (HIL).

From table 6.24, the AGF differed from the NNPC, CBN and NASS. While 100% of the respondents from the AGF were of the view that increases in MOCs profitability results to increase in government share of oil revenue,

only 47% of the respondents from the NNPC agreed. In the past few decades, the Nigerian government, through the NNPC, has renegotiated a number of its petroleum contracts with the MOCs with a view to getting more share of the MOCs profit⁶⁹. As such, it can be argued that the tax system, through contract renegotiation, had increases the government share of revenue as the profitability of the MOCs increase, especially as a result of increase in the price of crude oil.

In terms of the relationship between decrease in government's share of oil rent and decrease in MOCs' profitability, the respondents were not sure (median=3.00) as to whether the nation's petroleum tax system has the ability to decrease government share of petroleum revenue as the profitability of the MOCs decreases. Analysis of the differences between the respondents showed some differences. First, 67% of the NNPC disagreed that a decrease in MOCs' profitability caused a decrease in government takes while 60%, 72% and 64% of the CBN, MPR, and NASS respectively agreed. Second, 67% of the MOCs disagreed that a decrease in MOCs' profitability caused a decrease in government take while 72% of the MPR agreed. The difference in views between the MOCs and MPR might not be a surprise. This is because "in matters of mining taxation, governments rarely believe that companies pay too much tax; companies rarely believe that they pay too little tax..." (Otto et al., 2006: Xi). However, decrease in profitability of the MOCs influences their investment decisions. Thus, in order to retain them, producing nations

⁶⁹ Over the past decades the prices of crude oil has been on increase. For example between 1986 and 2011, the price of crude oil rose from an annual average of \$15.5 in 1986 to \$94.88 in 2011 (EIA, 2012). This apparently increased the profitability of the MOCs. In a bid to capture some part of the MOCs' profit, some producing nations, of which Nigeria is one, renegotiate existing contracts.

offer attractive incentives such as guaranteed minimum rate of return which Nigeria offered the MOCs during the oil glut of 1970s (see Section 3.2). This, by implication, reduced the government share of the oil rent. In this regard, government share of oil rent decreases as the profitability of the MOCs' decreases.

From the analysis above, the respondents perceived that the Nigeria's petroleum tax system has the ability to adjust to changes in the profitability of the MOCs. Hence, the H1₆ is accepted in relation to this statement.

6.4.6.3 Detection of fraudulent practices and underreporting of production volume

In this section, respondents' views were sought on the effectiveness of the control measures of the Nigerian petroleum tax system in the detection of fraudulent practices by tax officials and underreporting of production volume by MOCs. Effective fraud detection saves a lot of revenue for the nation and also strengthens the contractual relationship between the government and the MOCS.

Analysis of the median score and response frequency for fraudulent practices by tax officials revealed a score of 2.00 and a positive response frequency of 59%, meaning that the groups agreed that the control mechanisms of the nation's petroleum tax system were effective in the detection of fraudulent practices by the petroleum tax officials. Similarly, in terms of underreporting of production volume by the MOCs, the groups were 49% in agreement that control mechanisms were effective in the

detection of any underreporting of by the MOCs. Differences between the respondents are presented in Table 6.25.

Table 6.25: Mann-Whitney tests for fraudulent practices and underreporting of production

a) Fraudulent practices by tax officials			
Groups	N₁	A₂	
F	.047		
A₁	.013	.019	
b) Underreporting of production volume by multinational oil companies			
Groups	C	M₂	A₁
N₁	.045	.010	.007
H		.015	.011

Note: i) Only Mann-Whitney test results with p- values of less than or equal to 0.05 (i.e. $p \leq .05$) are shown in the table
 ii) N₁ = Nigerian national petroleum corporation (NNPC), F = Federal Inland Revenue Service (FIRS), C = Central Bank of Nigeria (CBN), M₁ = Ministry of Petroleum Resources (MPR), M₂ = Multinational Oil Companies (MOCs), A₁ = Accountant General's office (AGF), A₂ = Auditor General's office (AGO), N₂ = Nigeria Extractive Industries Transparency Initiative (NEITI), N₃ = National Assembly (NASS), and H = Higher Institution of learning (HIL).

From Table 6.25, 77% and 100% of the respondents from the FIRS and AGF agreed that the tax system was capable of detecting officials' fraudulent practices while respondents from the NNPC were 33% neutral and 40% in disagreement. The agreed view of the AGF and FIRS that the tax system was capable of detecting fraudulent practices of tax officials might not be correct. This is because empirical evidences have shown that the major problem in tax administration in Nigeria that has remain unsolved is the corrupt practices of tax officials in implementing the tax system (see Ayua, 1996).

The differences between the groups on the statement that the Nigeria's petroleum tax system has the ability of detecting underreporting of

production volume by the MOCs revealed that the NNPC, with 73% disagreement differed from the CBN, MOCs and AGF who held 70%, 83% and 83% agreed views respectively. However, since it is clear that Nigeria has not kept an accurate record of oil production in its nearly 50 years of E&P activities (Ezigbo, 2010), it will be difficult to conclude that the tax system has the ability of detecting underreporting of oil production.

From the analysis above, it can be argued that the Nigerian petroleum tax system neither has the ability to detect fraudulent practices by tax officials nor underreporting of production volume by MOCs. Hence, research hypothesis H1₆ is rejected in relation to this statement.

6.4.6.4 Ability of the Nigerian petroleum tax system to cope MOCs fear and public concerns

In this section, the respondents views on the ability of the Nigerian petroleum tax system to cope with two main issues were sought: i) multinational oil companies fear that the government might not honour contract terms in the long run and ii) public concern that multinational oil companies are receiving too great a share of the oil revenue. This question is important because of the significance of these two issues in the success of a nation's petroleum tax system. First, the long-term nature of petroleum contracts, which makes them exposed to distraction from unexpected events, is likely to put the parties in doubt as to the continuity of the contracts agreement. In this regard, Waelde and Kolo (2003:1) emphasizes as follows:

“The longer-term an agreement and the more exposed to geological, commercial and political risk, the more it becomes vulnerable to external events. Such events can make the operation of the contract partially impracticable or, from a commercial and financial perspective, no longer viable for one party. One consequence is for the parties to terminate the agreement or one party to withdraw”

Second, in many jurisdictions the perception amongst the general public is that the MOCs are receiving too great share of oil revenue. For example, the payment of high dividends by the MOCs is seen as a way in which the petroleum resource, which belongs to the community, is being under taxed (see Osmundsen, 2008).

From Table 6.22, 55% of the respondents agreed that the Nigerian petroleum tax system is flexible to cope with the MOCs’ fear that the government might not honour contract terms in the long run. On average, the respondents were in agreement (median = 2.00). On the other hand, 62% of the respondents were of the view that the Nigerian petroleum tax system has the ability to cope with the public concern that the MOCs were receiving too great a share of the oil revenue. Thus, with a mean score of 2.39 and a median score of 2.00 the respondents on average were in agreement.

Mann-Whitney tests results for the differences between the groups are presented in Table 6.2

Table 6.26: Mann-Whitney tests for MOCs fear and public concerns

a) Multinational oil companies fear that government might not honour contract terms in the long run				
Groups		F	M₁	
M₂		.016	.014	
b) Public concern that multinational oil companies are receiving too great a share of the oil revenue				
Groups		C	M₁	A₂
M₂		.047	.037	.019
N₂				.048

Note: i) Only Mann-Whitney test results with p- values of less than or equal to 0.05 (i.e. $p \leq .05$) are shown in the table
 ii) N₁ = Nigerian national petroleum corporation (NNPC), F = Federal Inland Revenue Service (FIRS), C = Central Bank of Nigeria (CBN), M₁ = Ministry of Petroleum Resources (MPR), M₂ = Multinational Oil Companies (MOCs), A₁ = Accountant General's office (AGF), A₂ = Auditor General's office (AGO), N₂ = Nigeria Extractive Industries Transparency Initiative (NEITI), N₃ = National Assembly (NASS), and H = Higher Institution of learning (HIL).

From Table 6.26, 100% of the MOCs agreed that the tax system has the ability to cope with the MOCs' fear that the government might not honour contract terms in the long term. This made it to be different from the FIRS and MPR who respectively held 54% and 43% disagreed response. In spite of the long period of contractual relationship between the government and the MOCs, there was no evidence to prove that the Nigerian government was not meeting up to its contractual obligations with the MOCs operating in the country. Rather the government is keen in creating conducive atmosphere for the MOCs to continue operating in Nigeria (Oyedele, 2012). This possibly was the reason for the MOCs' agreement.

In relation to public concern that multinational oil companies are receiving too great a share of the oil revenue, the MOCs differed with the

CBN, MPR and AGO. 100% of the respondents from the MOCs agreed that the tax system has the capacity to cope with the public concerns while the CBN held 50% agreed views. The MPR, on the other hand, held a view of 29% agreed, 43% neutral and 28% disagreed. Since the general public across oil producing countries, including Nigeria, hold the view that the MOCs are receiving too great a share of the oil rent (Osmundsen, 2006), it will be difficult to argue that Nigeria's petroleum tax system has the capacity to contain the public concern.

6.4.6.5 Government's reaction to requests for greater share of oil rent and compensations for environmental damages by communities in the oil region

The views of the respondents were sought on how the government reacts to the requests of the communities in the oil region for: i) greater share of oil rent and ii) compensation for damages to their environment. Understanding of government's reaction to these requests is important in explaining whether government's attention or lack of it is a cause, for example, to the militancy that is taking place in the Niger Delta oil producing region of Nigeria.

An analysis of the overall median scores revealed a score of 3.00 (neutral) for both requests. The position of the groups in this aspect of the survey is quite surprising considering the severity of militancy that is going on in the Niger Delta region of Nigeria. Nevertheless, the respondents might have chosen to be neutral because of the political sensitivity of the issues.

Table 6.27: Mann-Whitney tests for oil communities' request for greater share of oil rent

a) Request for greater share of oil rent				
Groups	N ₁	F	C	H
F	.050			
M ₁	.033	.003	.013	.022

Note: i) Only Mann-Whitney test results with p- values of less than or equal to 0.05 (i.e. $p \leq .05$) are shown in the table
 ii) N₁ = Nigerian national petroleum corporation (NNPC), F = Federal Inland Revenue Service (FIRS), C = Central Bank of Nigeria (CBN), M₁ = Ministry of Petroleum Resources (MPR), M₂ = Multinational Oil Companies (MOCs), A₁ = Accountant General's office (AGF), A₂ = Auditor General's office (AGO), N₂ = Nigeria Extractive Industries Transparency Initiative (NEITI), N₃ = National Assembly (NASS), and H = Higher Institution of learning (HIL).

There were no differences between the groups concerning the oil communities' request for compensation for damage to their environment. However, five differences were found between the groups for communities' request for a greater share of oil rent. The first difference was between the FIRS and the NNPC in which 77% of the FIRS agreed that the government was reactive to the communities request for greater share of oil rent, while only 20% of the NNPC agreed with about 50% of them neutral. The remaining four differences were between the MPR and three other groups, namely; NNPC, FIRS, CBN and HIL. 86% of the MPR disagreed while 77% and 60% of the respondents FIRS and CBN agreed. Over the years, the Nigerian government has reacted to the request of the oil communities in so many ways. The creation of the ministry of Niger Delta Affairs is a good example in recent years⁷⁰. Accordingly, the

⁷⁰ The Niger Delta is the oil producing region of Nigeria and, as discussed earlier, has been neglected for long. The administration of late Umar Yar'Adua, in response to the request of the oil communities, established the Ministry of Niger Delta in order to tackle the challenges of infrastructural development, environmental protection and youth empowerment in the region (Odiakose, 2008).

agreed view that the government was appropriately reacting to the request of the oil community is arguably the most appropriate.

In summary, despite the differences between the groups, it is clear from the evidence above that the government was reacting appropriately to the requests of the oil communities. Therefore, in relation to this statement, the research hypothesis H1₆ is accepted.

6.5 Summary of the main findings

The above sections presented analyses and interpretations of the data gathered on the perception questionnaire administered to the respondents. Specifically, six hypotheses relating to the Nigerian petroleum tax system were tested. The following sections present the summaries of the findings.

6.5.1 Findings on the appropriateness of the Nigerian petroleum tax system in representing the interests of the government and the MOCs

The analysis revealed that the respondents were of the view that the tax system was robust in achieving yearly increase in government share of oil revenue, adequate in tax incentives packages necessary for the attraction of foreign direct investments, and sound in terms of international competitiveness. The tax system was, however, found to be inappropriate in the distribution of oil revenue between the government and the oil majors and also among the three tiers of government. These findings suggest a number of implications

First, the perceived inequity in the distribution of oil revenue suggests that the government should review the tax system in order to create a sense of fairness between it and the MOCs. Second, the perceived yearly increase in government share of petroleum revenue suggests the government has been making an annual increase in its spending. This is because a positive relationship was found to exist between increase in tax revenue and government spending (Loganathan and Taha, 2007). As more money is available for spending, the government is likely to prioritise its spending in order to boost economic growth by putting money into people's pockets (Mitchell, 2005).

Third, the positive impact of tax incentives on MOCs has the effect of achieving government's desire for more foreign direct investments. Therefore, the government should sustain these incentives because any attempt to withdraw these incentives is likely to put the multinational oil companies' investment decisions to a hold. Fourth, the perceived unsatisfactory distribution of revenue among three tiers of government implies the need for the government to adhere to its policy of periodic review⁷¹ of the nation's revenue sharing formula in order to make it more acceptable by all the three tiers. The dissatisfaction, particularly by the oil producing states, if allowed to continue, will worsen the crises in the Niger Delta region of the country. This has potential implication of putting

⁷¹ The Nigerian constitution (1999) empowered the Revenue Mobilisation Allocation and Fiscal Commission (RMAFC) to "to review from time to time, the revenue allocation formulae and principles in operation to ensure conformity with changing realities. Provided that any revenue formula which has been accepted by an act of the National Assembly shall remain in force for a period of not less than five years for the commencement of the act".

the investments of the MOCs at risk which in turn affects crude oil production in the country.

Fifth, as the tax system was perceived to be internationally competitive, there is the likelihood that new MOCs will enter into the Nigerian petroleum industry. Therefore, government should come up with a policy that will allow newcomers into the industry and at the same time improve its relationship with the existing MOCs. In addition, it should also formulate policies that will encourage healthy competition among the enlarged MOCs operating in the industry.

6.5.2 Findings on the suitability of the Nigerian petroleum tax objectives in achieving the objectives set for the tax system

The respondents perceived that all the tax instruments employed were effective. Hence, the hypothesis that the "Nigeria's petroleum tax instruments are suitable for achieving the objectives set for the petroleum tax system" is accepted.

The perceived effectiveness of these instruments corroborates the findings that Nigeria's oil revenue share was increasing year by year. It also confirms the international competitiveness of the Nigerian tax system because it was an indication of the MOCs' confidence in the design of the nation's instruments. Accordingly, a policy should be put in place to achieve a higher level of effectiveness of these instruments by making them adjustable to changing circumstances in the global oil industry.

6.5.3 Findings relating to Nigeria’s administrative system for petroleum tax matters

Three main aspects of Nigeria’s administrative system for petroleum tax matters, namely, comprehensiveness, flexibility, and cost effectiveness of administration were tested. The aim was to ascertain whether, in the opinion of the respondents, that the three aspects were sound. It was found that the respondents perceived the administrative plan of the tax system to be comprehensive and flexibility but was not cost effectiveness. Hence, the hypothesis (H1₃) that Nigeria has in place a sound administrative system for petroleum tax matters is accepted for being comprehensive and flexible and rejected with regard to being cost effective.

The findings that the administrative plan was comprehensive suggest that it was wide-ranging but not free from loopholes. According to National Education Association (2011:2), loopholes are:

“provisions in the tax law – or lack thereof – that allow corporations to avoid their responsibility of paying their fair share for the privilege of doing business in a given jurisdiction and for the use of public services”.

As loopholes encourage tax avoidance⁷², the implication is that continuous review of the administrative plan is required to close all loopholes identified. This will save the government revenue loss.

⁷² Tax avoidance is a legal means of reducing tax payable (Bowler, 2009).

Similarly, since the administrative plan was perceived flexible but cost ineffective, the government should embark on a cost-benefit-analysis of the plan with a view to identify those administrative aspects whose costs outweigh their benefits and then use the flexibility of the plan to discard them. In this way, the government will be saved from incurring costs that are avoidable and also obviates the need for massive unplanned review in the future.

6.5.4 Findings on the effectiveness of the implementation processes of the Nigerian petroleum tax system

A number of findings were made in this respect, and the results suggest that the respondents were not convinced that the implementation processes of the tax system were effective. First, the study revealed that government support for the recruitment of required staff was poor. Second, all the tax administrative agencies were adequately financed by the government. Third, the findings revealed that the administrative agencies did not possess the required feature for successful administration of the tax system. Fourth, the respondents also perceived that the agencies were not working as an effective team and did not have the capacity to detect and prosecute the multinational oil companies' for noncompliance with tax regulations. On a general note, therefore, the hypothesis (H1₄) that the implementation processes for Nigeria's petroleum tax system are effective is rejected.

The findings above indicate a number of issues that require policy measures. First, the perceived poor support for recruitment of required staff can lead to poor administration because the staff available may not

be enough to accomplish the task at hand. Therefore, policy makers should ensure that recruitment policies are strictly adhered to.

Second, the findings revealed that there was a perception that all the administrative agencies were adequately financed by the government. The implication here is that the agencies would do everything possible to achieve desired targets, or may conceal failure to achieve targets, because any unjustified administrative lapses may not be an excuse for failure.

Third, the agencies perceived lack of features for effective administration can seriously undermine their performance no matter how adequate they were financed. There should, therefore, be a policy in place that channels part of finance of the agencies for the acquisition and maintenance of the required administrative features.

Fourth, the agencies' perceived inability to work as an effective team could be due to lack of clarity of goal (Larson and LaFasto, 1989). Government should redefine the team's goal to make it clearer and acceptable to the agencies. This can be achieved through active participation of the agencies in the goal setting process as noted by Pearson (1987).

Fifth, the perceived incapacity of the administrative agencies in the detection and prosecution of the MOCs for noncompliance with tax regulations has called into question the authority of the agencies over the multinational oil companies. As there was no compelling evidence that an MOC was prosecuted in Nigeria for noncompliance with tax regulations, in spite of the reported cases of tax evasion (Oduniyi, 2004), it implies that

the administrative agencies were not exercising their administrative authority on multinational oil companies. The tax agencies should be adequately empowered to perform their administrative role without fear or favour.

6.5.5 Findings on the effectiveness of measures put in place to ensure compliance with petroleum tax regulations

The analysis revealed that the respondents perceived that Nigerian petroleum tax system has a clear statement of purpose and capacity for regular review but lack the capacity for timely review. Similarly, the respondents were of the view that the tax system has in place a database for petroleum taxes paid, adequate number of government petroleum taxation experts, and also tax officials that have adequate knowledge of the oil industry. Furthermore, the respondents perceived that all the policy measures put in place to ensure prompt payment of petroleum taxes were effective. Hence, the research hypothesis H1₅ is rejected for timely review of the tax system and accepted for all the other measures.

The implication of these findings is fourfold. First, the tax system's perceived clear statement of purpose suggests that compliance costs for petroleum tax administration were low in Nigeria. This is because the easier the regulations are understood, the lower the costs of compliance for the tax administrators (Thuronyi, 1996). Thus, more revenue should accrue to the government.

Second, the respondents' perception of the tax system's capacity for regular review means that the tax system is responsive to changing

circumstances (Ogbonna and Ebimobowei, 2012). The government should, as a matter of policy, maintain a culture of reviewing the tax system at a defined regular interval. Care should, however, be taken to ensure that the system's stability is not undermined. Stability of the tax system, as discussed in Section 2.2, is an important characteristic that affects the multinational oil companies' confidence in government commitment towards petroleum contracts.

Third, the respondents' perception of the Nigerian petroleum tax system's inability to trigger a timely review suggests government's inadequate consultations in its reform decisions. This is evidenced by the stiff resistance shown by the multinational oil companies on the proposed reform of the industry via the Petroleum Industry Bill which has been lingering since 2002 (Alike, 2011). The government should, therefore, make a wide consultation across the stakeholders in the industry, particularly the multinational oil companies, before embarking on a reform agenda.

Finally, the implication of the effectiveness of the policy measures for prompt payment of petroleum taxes is that the government is assured of the receipt of its share of oil revenue. This is important because it will assist the government in meeting its transformation agenda.

6.5.6 Findings on the flexibility of the tax system in coping with changes in factors that significantly affect tax matters

The analysis revealed that there was a perception that the tax system has the ability to adjust to changes in tax regulations across oil producing nations and also capable of coping with the multinational oil

companies' fear of increase in risk of making losses. In terms of the relationship between government take and multinational oil companies profitability, the respondents perceived that the tax system has the ability to increase government take when the profitability of the multinational oil companies increases and vice versa. Furthermore, it was the perception of the respondents that the tax system was not effectively designed to detect both the fraudulent practices of tax officials and underreporting of production volumes by the multinational oil companies. The respondents believed that the tax system was effective in coping with the multinational oil companies' fear on issues relating to contract terms but not effective in coping with the public concerns. On government's reactions to oil communities' requests for oil rent and compensation for environmental damages, the respondents' were in agreement.

The perceived ability of the tax system to adjust to changes in the tax systems in other countries confirms the findings on international competitiveness of the tax system discussed in Section 6.4.1.5. This entails the possibility of more multinational oil companies coming to operate in Nigeria. Hence, government should create conducive operating environment for both existing and prospective multinational oil companies.

The findings on the relationship between government's take and multinational oil companies' profitability imply that the tax system was flexible⁷³. As flexible tax systems becomes stable due to changes in

⁷³ A flexible tax system provides the host government with enough share of economic rent under different conditions of the investors' profitability (Tordo, 2007).

markets and project conditions (Tordo, 2007), renegotiation of contracts between the government and the multinational oil companies might be limited.

The perceived ineffectiveness of the tax system to detect both the fraudulent practices of tax officials and underreporting of production volumes by the multinational oil companies has the potential of causing the government a huge revenue loss. Government should reinvigorate its anticorruption agencies to make them more responsive in the discharge of their duties⁷⁴. This will go a long way in curing the corrupt practices in the industry.

The findings that the government was reactive to the request of the oil communities for both oil rent and compensation for environmental damage suggest that the government has the intention of containing the militancy in the oil producing region of the country. Government should, therefore, continue to show appropriate attention to the communities' requests as this has an impact on petroleum operations in the country.

6.6 Synthesis of findings

This study has presented the results of "A Theoretical and Empirical Investigation into the Design and Implementation of an Appropriate Tax Regime: an Evaluation of Nigeria's Petroleum Taxation Arrangements". The empirical approach adopted was to seek the perceptions of a range of experts on Nigeria's petroleum tax system and to supplement their

⁷⁴ Nigeria has anti-corruption agencies: i) Economic and financial crimes commission (EFCC) which is empowered to prevent, investigate, prosecute and penalise economic and financial crimes and ii) Independent corrupt practices and other related offences (ICPC) which is mandated to prohibit and prescribe punishment for corrupt practices and other related offences.

observations through engagement with the literature and by framing the conclusions against both the literature and the theoretical framework adopted. There were clear limitations associated with this approach. The limitations relate to whether the “experts” really have the appropriate knowledge of the petroleum tax system in Nigeria and whether they are representative of the population of “experts” from which they were drawn. On this latter point every effort was made to seek assurances and advice from a range of individuals in positions of authority in Nigeria’s oil and gas taxation sector. For details of this process see Section 5.4.1. On the basis of their input and by subsequent interrogation of the available information of the groups selected, there are reasonable grounds to support the view that the “experts” do have the requisite knowledge and are representative of their groups (see Section 5.4.2). The methodology still has the severe limitation that doubts will always exist about the care taken by individuals completing a fairly lengthy questionnaire and more importantly whether they are objectively answering the questions asked. This limitation was evident from the outset, but it was precisely this point that could prove to be important for the conclusions that could emerge from the analysis. On balance there was enough of a trend evident from the responses to form a view, however tentative, regarding the acceptance or rejection of the various hypotheses that had been derived and tested (see Section 5.3). These conclusions were presented to the same individuals who had advised on the real “expertise” of the selected sample groups for comment on the apparent legitimacy of them and on whether the conclusions were in accord with their own perceptions of the situation. In the main they were happy to accept that the findings

appeared to reflect the reality of the situation. Again this evidence is weak and has to be interpreted with caution regarding the "objectiveness" of even these individuals; did they also have their own agenda in answering in a positive way to the questions asked?

As mentioned above these limitations were evident from the outset. Accepting that there does exist such a group of influential petroleum tax "experts" it seemed reasonable to conclude that they would have been influential in devising the petroleum tax system and influential in its operational impact. Evidence for this is available in the literature (see Alike, 2011; Igbikiowubo.2010; Ojo, 1984). The literature also revealed that there was a range of views regarding the efficacy of the petroleum tax system in Nigeria (see Ogbonna, 2012; Lukman, 2010). It thus seemed interesting to ascertain if the "experts" had different views on the questions in the questionnaire and if that might shed light on the differences in opinion evident in the literature. Thus a potential significant finding from the research undertaken might relate to the different goals and objectives that the "experts" would want from the revenue obtained from the petroleum tax system in Nigeria. And would these differences be reflected in the different responses to the questionnaire? If that were the case the weak conclusions drawn relating to the hypotheses that has been tested might even become a secondary finding. If there are tensions and different motivational factors present amongst the groups of "experts" then that could well account for the theme emerging in the literature relating to the lack of efficacy of the petroleum tax system in Nigeria. This could be an important finding. It was for this reason that the perception questionnaire instrument was

used for data gathering. It would provide evidence relating to the differing views of the “experts”. This rationale has been referred in Section 5.4.3. An analysis of the potential motivating factors for the actions of each group was presented in Section 5.4.1.

It is interesting to associate this ex ante analysis of the possible goals of each group (drawn from the literature and deduced from the theoretical basis for the study) with a summary of the main differences in responses of each group.

Table 6.28 below presents an aggregated summary of the material differences of each group to the questions addressing each hypothesis. The interplay between each group and the possible reasons for the differences were discussed were discussed in Section 6.4.

Table 6.28: Summary of Differences among Stakeholder Groups

Hypotheses	Stakeholder Groups									
	N ₁	F	C	M ₁	M ₂	A ₁	A ₂	N ₂	N ₃	H
H1₁: Nigeria's petroleum tax system is a fair representation of the interests of the government and the MOCs.	M -	A 64%	A 70%	M -	A 50%	A 57%	A 50%	M -	A 59%	A 58%
H1₂: Nigeria's petroleum tax instruments are suitable for achieving the objectives set for the petroleum tax system	A 56%	A 83%	A 66%	M -	N 50%	A 76%	A 60%	A 90%	A 54%	A 64%
H1₃: Nigeria has in place a sound administrative plan for petroleum tax matters	D 60%	M -	A 50%	D 53%	A 50%	A 50%	M -	D 50%	D 55%	A 69%
H1₄: The implementation processes for Nigeria's petroleum tax system are effective	M -	A 60%	A 69%	M -	M -	A 74%	A 62%	M -	M -	A 73%
H1₅: The compliance mechanisms relating to the Nigerian petroleum tax system are adequate	M -	A 70%	A 73%	M -	A 50%	A 73%	A 67%	A 58%	A 63%	A 66%
H1₆: The Nigerian petroleum tax system is reactive to changes in factors that significantly affect tax matters	M -	A 56%	A 61%	M -	A 63%	A 59%	M -	A 55%	A 64%	A 51%

Note: i) N₁ = Nigerian national petroleum corporation (NNPC), F = Federal Inland Revenue Service (FIRS), C = Central Bank of Nigeria (CBN), M₁ = Ministry of Petroleum Resources (MPR), M₂ = Multinational Oil Companies (MOCs), A₁ = Accountant General's office (AGF), A₂ = Auditor General's office (AGO), N₂ = Nigeria Extractive Industries Transparency Initiative (NEITI), N₃ = National Assembly (NASS), and H = Higher Institution of learning (HIL).

ii) A = Agreement, N = Neutral, D = Disagreement, M = Mixed response

iii) Agreed, Neutral and Disagreed views used are those that are 50% and above

From Table 6.28 it can be seen that there were major differences and that indeed they can be linked to the ex ante identification of possible differences. For example, the Nigerian National Petroleum Corporation had a mixed view to suggestions relating to the tax system's fair representation of the interests of the government but was positive in its response to suggestions relating to the suitability of the tax instruments in meeting the objectives set for the tax system. This is consistent with its goals of improving the nation's oil subsector because holding a mixed view suggests the need for further compromise between the government

and the multinational oil companies in order to make the tax system more representative of their interests. The Ministry of Petroleum Resources, on the other hand, held mixed view to most of the suggestions possibly because it does not see the government receiving enough revenue from its petroleum contractual agreement. Similarly, the Higher Institutions Learning, as expected, was positive in all its responses. This is consistent with the ex ante arguments made in Section 5.4.1 relating to this group. These results suggest that there are tensions between these influential groups. It is uncertain what the precise consequences are for the future design and operation of the Nigerian petroleum fiscal system. The one group that has the most differences of opinion with the other groups is Nigerian National Petroleum Corporation. This is important given the key role that Nigerian National Petroleum Corporation plays in the oil and gas sector.

One possible conclusion from this finding is that if there is to be progress in making the petroleum tax system more efficient and effective then the policy makers need to take into account the influence of each of these groups in setting that policy and to assess what their motives are for doing so. Further the regulators need to assess the impact of the different groups in operationalising the petroleum tax system in Nigeria. This clearly requires further research to be undertaken. This finding and conclusion may be important for the future success of the petroleum tax system in Nigeria in generating the revenue that will help Nigeria meet its goals and objectives. It therefore, arguably, justifies the approach adopted in thesis in using a perception questionnaire as the basis for generating data.

6.7 Conclusion

This chapter presented an analyses of data gathered for the study. The aim was to ascertain whether, in the opinions of experts, the Nigerian petroleum tax system is appropriately designed and implemented to meet the needs of Nigeria. The outcome of the analysis, in general, suggests that the respondents perceived the tax system was appropriate in its design for meeting Nigeria's desire for high oil take and an increase in foreign direct investments. Specifically, most of the tax objectives and instruments were suitable, greater aspects of the tax administration were ineffective, compliance techniques were mostly adequate, and the ability of the tax system to cope with changing circumstances was positive.

Chapter seven Summary and conclusion

7.1 Introduction

The aim of this chapter is to present a summary of the preceding chapters and then conclude the thesis. Accordingly, the rest of the chapter is divided into four sections. Section 7.2 presents a summary of the entire study. This is followed by section 7.3 which presents the conclusions that emerged from the theoretical and empirical investigations carried out. Section 7.4 deals with the inherent limitations of the study, while section 7.5 deals with recommendations for further research.

7.2 Summary

This thesis investigated the Nigerian petroleum tax system with the aim of ascertaining whether it is appropriately designed to extract the benefits desired from the country's petroleum contractual arrangements. The research was underpinned by the theoretical assumption that "economic rent" drives most aspects of determining an appropriate petroleum tax system. The results reported in the analysis sections provide evidence that this assumption was valid (see Section 4.6). Six specific objectives were set (see Section 1.3). These objectives emerged from the study's research question:

"How well does the Nigerian Petroleum tax regime serve the needs of Nigeria?"

In order to achieve the objectives of the study, relevant literature was reviewed on petroleum taxation covering issues relating to regime design

and implementation. This general review revealed a number of issues including the fact that there is no single tax regime that is applicable to all nations, implying that each country designs its tax system on the basis of its needs and circumstances. More significantly, the review revealed that the alignment of the interests of the government and that of the MOCs is central to the success of any petroleum tax regime.

Using the general review as a basis, a review of the Nigerian petroleum tax system, with emphases on design and implementation, was conducted. Like any other oil producing nation, the review revealed that Nigeria has as its main petroleum tax objective the desire to ensure that maximum revenue is accrued to the government from oil and gas activities while at the same time guaranteeing the investors a reasonable return on investment. In terms of petroleum tax administration, Nigeria also happens to be one of the many countries that adopt a multi-agency approach. This might not be unconnected with the desire by most oil producing nations to reduce the risk of serious error and collusion prevalent with a single administrative agency approach.

The findings of the literature review informed the decision to adopt economic rent theory as a theoretical framework in this study. The theory provides a framework for the study of petroleum taxation. The most important factor influencing multinational oil companies decision to invest in E&P activities in oil endowed nations is the manner in which the nation's petroleum tax system is designed and implemented. A petroleum tax system that is designed to capture economic rent does not act as a disincentive to firms to undertake any E&P activity since rent is

not a requirement for the continuation or initiation of business operations. After a thorough methodological review, Burrell and Morgan's (1979) sociological research paradigm was perceived to be a widely accepted framework that defines the underlying paradigm within the context of management and sociological literature. Accordingly, it was decided to work within the Burrell and Morgan's (1979) interpretive paradigm with nominalism, anti-positivism, and voluntarism as ontological, epistemological, and human nature, assumptions respectively. This position led to the adoption of ideographic methodology. Regarding the idea of regulation and radical change as put forward by Burrell and Morgan (1979), this study inclined to regulation rather than radical change.

Guided by the chosen paradigm, a questionnaire was designed and used to gather the data for the study. The original intention was to triangulate using interview and questionnaire but because of the fact that none of the respondents agreed to be interviewed the study abandoned the use of triangulation. The questionnaire was constructed and first subjected to two pilot tests before it was administered to the respondents. The data gathered were analysed using nonparametric statistics of Mann-Whitney tests informed by descriptive statistics. Specifically, the analysis involved an examination of respondents' opinions on four areas relating to the

Nigerian petroleum tax system: i) objectives the tax system is designed to achieve; ii) the manner in which the tax system is administered; iii) the effectiveness of policies put in place to ensure compliance with the

tax regulations; and iv) the extent to which the tax system is flexible enough to cope with changing circumstances.

7.3 Limitations of the study

One limitation of the study is that different respondent groups may be better informed about different parts of the study questionnaire. This limitation was mitigated, however, by attempting to ensure the only persons with the right expertise filled the questionnaire.

As with any other questionnaire-based research, there is the intrinsic difficulty of using a questionnaire as an instrument of research. As indicated in Chapter 5, there were delays in responses, respondents complaining of lack of time, and in some cases respondents simply refusing to fill the questionnaires they had agreed to complete. All these circumstances posed serious threats to the data collection exercise. However, in order to minimise the impact of this problem, a collection date was agreed with the respondents. Where questionnaires were not ready for collection on agreed dates, new dates were set for collection. In addition to collection dates, the researcher also gave several telephone calls to the respondents and also paid several visits to the respondents' places of work.

Furthermore, the use of a questionnaire as the only research instrument in the study limits the opportunity for enjoying the benefits associated with triangulation, such as the desire to overcome the weaknesses of a single-method research. In this research, realising the importance of finding plausible and credible explanations for the results as the main

goal of all research, the researcher painstakingly identified all the reliability and validity threats associated with the study and minimised them accordingly (see Chapter 5).

Another limitation relates to whether the “experts” really have the appropriate knowledge of the petroleum tax system in Nigeria and whether they are representative of the population of “experts” from which they were drawn. On this latter point every effort was made to seek assurances and advice from a range of individuals in positions of authority in Nigeria’s oil and gas taxation sector (see Footnote 42 for details).

7.4 Conclusion

The literature reviewed and analyses of the surveyed data have led to the emergence of several conclusions in this thesis. First and foremost, the thesis concludes that it is very difficult to make a single petroleum tax system that serves the needs of different countries. Countries differ in so many respects including cost and geological structures. These differences make it to be paramount for countries to tailor their fiscal regimes in a way that is attractive to the multinational oil companies.

Similarly, it is also the conclusion of this thesis that at the heart of Nigeria’s petroleum tax regime is the desire to capture as much revenue as possible for the government. This is consistent with the assertion that since host governments are the owners of the petroleum resources, the greater share of the economic rent should accrue to them (Crowson, 2004). Again the respondents’ perception that the distribution of

petroleum revenue in Nigeria between the government and the multinational oil companies is disproportionate further supports this conclusion.

Furthermore, it is the conclusion of this thesis that the implementation processes of the Nigerian petroleum tax system is weak and requires further improvement. This conclusion is based on the perceived: i) cost ineffectiveness of the tax system, ii) administrative agencies lack of required features for successful administration, iii) tax agencies inability to work as an effective team; and iv) tax agencies inability to detect and prosecute those multinational oil companies that fail to comply with the tax rules. All these issues are paramount to administrative effectiveness and, therefore, call for their improvement.

Moreover, the thesis concludes that the Nigerian petroleum tax system is effective in ensuring compliance with petroleum tax regulations. This conclusion is based on the results of the analysis of the respondents' perceptions on the effectiveness of measures put in place in Nigeria to ensure that tax regulations are complied with. Overall the respondents perceived that all the measures including a clear statement of tax purpose, adequacy of government tax officials, and prompt payment policies were in place and effective.

It is also the conclusion of this thesis that the Nigerian petroleum tax system lacks the capacity for timely review. This conclusion is based on the respondents' perception about the Nigerian petroleum tax system's incapacity for a timely review as discussed in Section 6.5.3. Supporting the respondents' view is the apparent inability of the nation's parliament

to pass the Petroleum Industry Bill (Alike, 2011). The bill, which has the main aim of devising a new fiscal regime for the Nigerian petroleum industry, proposes changes affecting provisions relating to companies income tax, rents and royalties, and Nigerian hydrocarbon tax.

In terms of ability to adjust to changes in tax regulations across oil producing nations, the respondents were of the view that the Nigerian petroleum tax system has that ability. Against this background, the thesis concludes that the Nigerian petroleum tax system is sensitive to changes in tax regulations across oil producing countries. This position is buttressed by the willingness on the part of the Nigerian government for a holistic reform of the nation's petroleum fiscal regime via the proposed petroleum industry bill.

7.5 Further research

The previous sections provide some evidence calling for further research that could be seen as a possible extension of the present study. The paragraphs below underline some of the areas requiring further research.

First, in response to the inequity in the distribution of oil revenue between the Nigerian government and the multinational oil companies evidenced by the respondents' perceptions in this study, it is recommended that further research be undertaken to investigate possible other means that would lead to fairer distribution of oil rent between the government and the multinational oil companies. Fairness in the distribution of oil revenue is at the heart of all petroleum contractual relationships between the government and the multinational oil companies. Where the multinational oil companies, for instance, are

convinced that there is equity in the distribution of revenue between them and the government, there is the likelihood that they may increase the pace of their Exploration and Production activities which is a fundamental requirement of all oil producing nations.

Second, further research is also recommended in the area of the implementation processes of the Nigerian petroleum tax system. The present research reveals that the administration of the Nigerian petroleum tax system is cost ineffective. It also reveals that the administrative agencies were neither working as an effective team nor have the ability to detect and prosecute those multinational oil companies that fail to comply with tax rules. While this finding has met the objective of this study, it would be interesting to undertake further research in order to uncover the reasons why the tax system behaves that way.

Third, in recent years Nigeria is shifting its focus from Joint Venture contracts to Production Sharing Contracts. The main reason advanced in the literature is that the government is finding it difficult to meet its Joint Venture cash calls commitment. While it is logical to believe that such an attempt is in order considering the financial needs of Nigeria, it is, however, not enough to warrant such a shift given the broad range of Nigeria's petroleum tax objectives. Accordingly, a further research is recommended to investigate the impact of Nigeria's current shift from Joint Venture contracts to Production Sharing Contracts on the nation's petroleum tax objectives.

Fourth, further research is needed to identify the general public's views on how oil revenue should be shared between the government and the multinational oil companies. The present study found that the respondents were of the view that the Nigerian petroleum tax system was ineffective in coping with public concerns on issues relating to revenue sharing between the governments and the multinational oil companies. While this finding is adequate for the purpose of this study, a further research in this aspect may put the government in a position to effectively capture the public views on how the revenue should be shared in the nation's tax policies.

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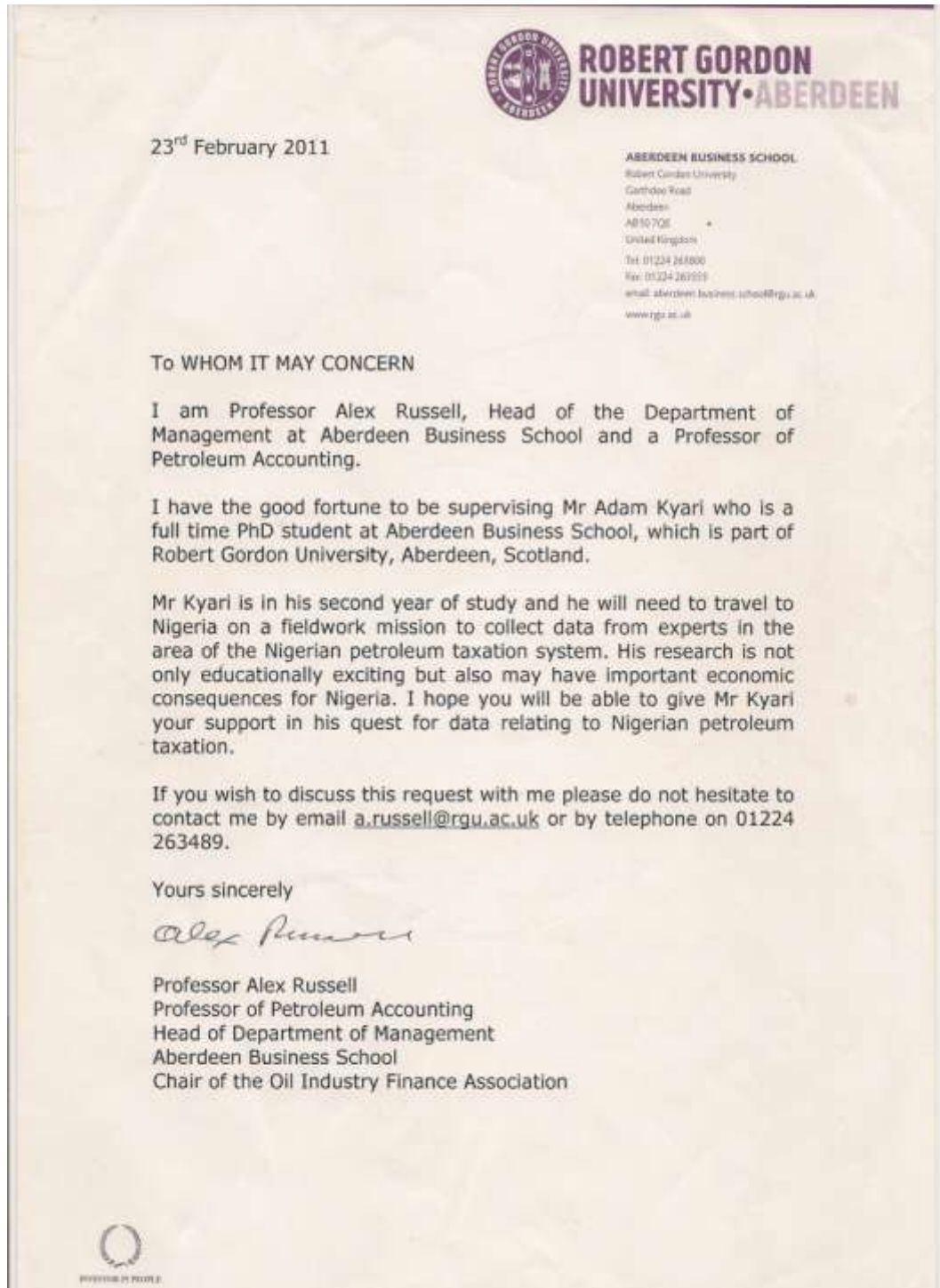
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Appendices

Appendix A

(Supervisor's introductory letter)



Appendix B
(Codification of Questionnaire Response)

Variable	Variable Label	Value
Sec1Q1	Place of work	*
Sec1Q2	Occupation	**
Sec1Q3	Working experience in years	***
Sec2Q1a	Equity in income distribution	1=SA,2=A,3=N,D=4, SD=5
Sec2Q1b	Increase in government share of oil revenue	1=SA,2=A,3=N,D=4, SD=5
Sec2Q2a	Investment tax credit	1=SA,2=A,3=N,D=4, SD=5
Sec2Q2b	Accelerated depreciation	1=SA,2=A,3=N,D=4, SD=5
Sec2Q2c	Guaranteed profit margin to investors	1=SA,2=A,3=N,D=4, SD=5
Sec2Q2d	Cost consolidation	1=SA,2=A,3=N,D=4, SD=5
Sec2Q3a	Federal government	1=SA,2=A,3=N,D=4, SD=5
Sec2Q3b	State government	1=SA,2=A,3=N,D=4, SD=5
Sec2Q3c	Local government	1=SA,2=A,3=N,D=4, SD=5
Sec2Q4a	Tax incentives to investors	1=SA,2=A,3=N,D=4, SD=5
Sec2Q4b	Allocation of part of oil produced to MOCs	1=SA,2=A,3=N,D=4, SD=5
Sec2Q4c	Guaranteed minimum rate of return to investors	1=SA,2=A,3=N,D=4, SD=5
Sec2Q4d	Compensation of investors for increase in risks	1=SA,2=A,3=N,D=4, SD=5
Sec2Q5a	Bonus/fees	1=SA,2=A,3=N,D=4, SD=5
Sec2Q5b	Royalty	1=SA,2=A,3=N,D=4, SD=5
Sec2Q5c	Income tax	1=SA,2=A,3=N,D=4, SD=5
Sec2Q5d	Participation	1=SA,2=A,3=N,D=4, SD=5
Sec2Q5e	Production sharing	1=SA,2=A,3=N,D=4, SD=5
Sec3Q1a	Comprehensive admin plan	1=SA,2=A,3=N,D=4, SD=5
Sec3Q1b	Flexible admin plan	1=SA,2=A,3=N,D=4, SD=5
Sec3Q1c	Cost effective admin plan	1=SA,2=A,3=N,D=4, SD=5
Sec3Q2a	Recruitment of required staff	1=SA,2=A,3=N,D=4, SD=5
Sec3Q2b	Financial support	1=SA,2=A,3=N,D=4, SD=5
Sec3Q2c	Training and development of staff	1=SA,2=A,3=N,D=4, SD=5
Sec3Q2d	Improvement of staff welfare	1=SA,2=A,3=N,D=4, SD=5
Sec3Q3a	Federal inland revenue service	1=SA,2=A,3=N,D=4, SD=5
Sec3Q3b	Department of Petroleum Resources	1=SA,2=A,3=N,D=4, SD=5

Sec3Q3c	Central bank of Nigeria	1=SA,2=A,3=N,D=4, SD=5
Sec3Q3d	National petroleum investment management services	1=SA,2=A,3=N,D=4, SD=5
Sec3Q3e	Ministry of petroleum resources	1=SA,2=A,3=N,D=4, SD=5
Sec3Q4a	Appropriate number of petroleum tax officials	1=SA,2=A,3=N,D=4, SD=5
Sec3Q4b	Good information system	1=SA,2=A,3=N,D=4, SD=5
Sec3Q4c	Linked information system	1=SA,2=A,3=N,D=4, SD=5
Sec3Q4d	Access to national petroleum database	1=SA,2=A,3=N,D=4, SD=5
Sec3Q5a	Effective team work	1=SA,2=A,3=N,D=4, SD=5
Sec3Q5b	Effectiveness in detecting non-compliance	1=SA,2=A,3=N,D=4, SD=5
Sec3Q5c	Prosecution of companies for non-compliance	1=SA,2=A,3=N,D=4, SD=5
Sec4Q1a	Clear purpose of tax regulation	1=SA,2=A,3=N,D=4, SD=5
Sec4Q1b	Capacity for regular review of tax regulation	1=SA,2=A,3=N,D=4, SD=5
Sec4Q1c	Capacity for timely review of tax regulation	1=SA,2=A,3=N,D=4, SD=5
Sec4Q2a	Database for petroleum tax paid	1=SA,2=A,3=N,D=4, SD=5
Sec4Q2b	Adequate number of government petroleum taxation experts	1=SA,2=A,3=N,D=4, SD=5
Sec4Q2c	Tax official's knowledge of the oil industry	1=SA,2=A,3=N,D=4, SD=5
Sec4Q3a	Self assessment of tax liabilities	1=SA,2=A,3=N,D=4, SD=5
Sec4Q3b	Monthly instalment payments for tax liabilities	1=SA,2=A,3=N,D=4, SD=5
Sec4Q3c	Penalties for late payment	1=SA,2=A,3=N,D=4, SD=5
Sec5Q1a	Changes in tax regulation in other countries	1=SA,2=A,3=N,D=4, SD=5
Sec5Q1b	Increase in investors risk in making loss	1=SA,2=A,3=N,D=4, SD=5
Sec5Q2a	Increase in govt take caused by increase in the profit of MOCs	1=SA,2=A,3=N,D=4, SD=5
Sec5Q2b	Decrease in govt take caused by decrease in the profit of MOCs	1=SA,2=A,3=N,D=4, SD=5
Sec5Q3a	Detection of fraudulent practice by tax officials	1=SA,2=A,3=N,D=4, SD=5
Sec5Q3b	Detection of underreporting of production by MOCs	1=SA,2=A,3=N,D=4, SD=5
Sec5Q4a	MOCs fear that govt. might not honour contract terms in the long term	1=SA,2=A,3=N,D=4, SD=5
Sec5Q4b	Public realisation that MOCs are receiving too great a share of the oil revenue	1=SA,2=A,3=N,D=4, SD=5
Sec5Q5a	Request for greater share of oil rent by communities in the oil region	1=SA,2=A,3=N,D=4, SD=5
Sec5Q5b	Requests for compensation by communities in oil region for damage to their environment	1=SA,2=A,3=N,D=4, SD=5

Note: *1=NNPC, 2=FIRS, 3=CBN, 4=MPR, 5=MOCs, 6=AGF, 7=AGO, 8=NEITI, 9=NASS, 10=HIL
**1=Accountant, 2=Auditor, 3=Tax official, 4=Law maker, 5=Lecturer, 6=Lawyer,
7=Engineer, 8=Others
***1=<5 years, 2=5-9 years, 3=10-14 years, 4=15-19 years, 5=20-24 years, 6=>25
years
^^SA=Strongly agree, A=Agree, N=Neutral, D=Disagree, SD=Strongly disagree

Appendix C
(Research Questionnaire)



June, 2011

Dear Sir/Madam,

I am a research scholar based in Robert Gordon University, the UK's number one modern university. My research speciality is petroleum taxation and my desire is to make a contribution to improving the petroleum taxation system in Nigeria. I have designed a questionnaire which should enable me to base my research findings on the opinions of experts in the field.

I know that you have real expertise in this area and your contribution would be invaluable to the study. I would be grateful if you can spare the 10-15 minutes it would take to fill in the attached questionnaire. If you participate I would be happy to let you have a summary of my findings in due course, if you wish to see them. Instructions for completing the questionnaire can be found on the form itself.

Please be assured that your participation is voluntary and that strict confidentiality will be maintained with respect to your responses to the questionnaire. All information you provide will be kept in a secure location; only group results will be documented.

Should you have any questions at any time about the survey or procedures, you can contact me on +447795672510 or by email at these email addresses; a.k.kyari@rgu.ac.uk, adamkyari@yahoo.com.

Thank you for your time and cooperation.

Yours sincerely,

Adam Konto Kyari

**Section One
(Demographic Characteristics of Respondents)**

Please tick as appropriate;

1) Place of Work:

1) Nigerian National Petroleum Corporation	
2) Federal Inland Revenue Service	
3) Central Bank of Nigeria	
4) Ministry of Petroleum Resources	
5) Multinational Oil Company	
6) Accountant General's Office	
7) Auditor General's Office	
8) Nigeria Extractive Industries Transparency Initiative	
9) National Assembly	
10) Higher Institution of learning	

2) Occupation:

1) Accountant	
2) Auditor	
3) Tax Official	
4) Law Maker	
5) Lecturer	
6) Lawyer	
7) Engineer	

If your occupation is not listed, please specify here:

.....

3) Working Experience (in years):

1	2	3	4	5	6
<5	5-9	10-14	15-19	20-24	>25

**Section Two
(Nigerian Petroleum tax objectives and Instruments)**

Please answer each statement by ticking the appropriate box:

1) Please indicate the extent of your agreement with each of the following statements:

1= Strongly Agree, 2=Agree, 3=Neutral, 4=Disagree, 5=Strongly Disagree

Statements	1	2	3	4	5
a) Distribution of petroleum revenue between the government and the oil companies is equitable					
b) Government share of revenue from petroleum taxation has usually increased year-by-year					

2) Please indicate the strength of your agreement that each of the following incentives helps to increase multinational oil companies' investment in the Nigerian oil industry:

1= Strongly Agree, 2=Agree, 3=Neutral, 4=Disagree, 5=Strongly Disagree

Incentives	1	2	3	4	5
a) Investment tax credit					
b) Accelerated depreciation					
c) Guaranteed profit margin for multinational oil companies					
d) Offsetting of new projects' costs with the income of ongoing projects					

3) Please indicate the strength of your agreement that the following tiers of government in Nigeria are satisfied with the manner in which revenue from petroleum taxation is shared:

1= Strongly Agree, 2=Agree, 3=Neutral, 4=Disagree, 5=Strongly Disagree

Statements	1	2	3	4	5
a) Federal government					
b) State governments					
c) Local governments					

4) Please indicate the strength of your agreement that each of the following elements increases the international competitiveness of the Nigerian petroleum tax system:

1= Strongly Agree, 2=Agree, 3=Neutral, 4=Disagree, 5=Strongly Disagree

Statements	1	2	3	4	5
a) Tax incentive packages to investors					
b) Allocation of part of the oil production to multinational oil companies					
c) Guaranteed minimum rate of return to multinational oil companies					
d) Compensation of investors for any increase in risks					

1) Each of the following petroleum tax instruments is effective in capturing an appropriate higher share of oil rent to the government:

1= Strongly Agree, 2=Agree, 3=Neutral, 4=Disagree, 5=Strongly Disagree

Statements	1	2	3	4	5
a) Bonuses/fees					
b) Royalty					
c) Income tax					
d) Participation					
e) Production sharing					

Section Three (Administration of Nigerian Petroleum tax System)

Please answer each statement by ticking the appropriate box.

1) Nigeria's administrative plan for petroleum tax matters is:

1= Strongly Agree, 2=Agree, 3=Neutral, 4=Disagree, 5=Strongly Disagree

Statements	1	2	3	4	5
a) Comprehensive					
b) Flexible					
c) Cost effective					

2) Government helps support effective administration of the petroleum tax system through providing:

1= Strongly Agree, 2=Agree, 3=Neutral, 4=Disagree, 5=Strongly Disagree

Statements	1	2	3	4	5
a) Recruitment of required staff					
b) Financial support					
c) Training and development of staff					
d) Improvement of staff welfare					

3) Each of the following petroleum tax administrative agencies in Nigeria is adequately financed:

1= Strongly Agree, 2=Agree, 3=Neutral, 4=Disagree, 5=Strongly Disagree

Statements	1	2	3	4	5
a) Federal Inland Revenue Service					
b) Department of Petroleum Resources					
c) Central Bank of Nigeria					
d) National Petroleum Investment Management Services					
e) Ministry of Petroleum Resources					

4) Each of the petroleum tax agencies identified in statement 3 above has the following features:

1= Strongly Agree, 2=Agree, 3=Neutral, 4=Disagree, 5=Strongly Disagree

Statements	1	2	3	4	5
a) Appropriate number of petroleum tax professionals					
b) Good information system					
c) Information system that is linked to other agencies' information systems					
d) Access to National petroleum tax database					

If you wish to make any additional comments on any of the agencies, please write them in the space below:

.....

.....

.....

5) All of the five petroleum tax administrative agencies identified in statement 3 above:

1= Strongly Agree, 2=Agree, 3=Neutral, 4=Disagree, 5=Strongly Disagree

Statements	1	2	3	4	5
a) Work as an effective team					
b) Are effective in detecting non-compliance					
c) Prosecute companies for non-compliance					

If you wish to make any additional comments on any of the agencies, please write them in the space below:

.....

.....

.....

**Section Four
(Petroleum tax compliance)**

Please answer each statement by ticking appropriate box.

1) The Nigerian petroleum tax system possesses each of these attributes:

1= Strongly Agree, 2=Agree, 3=Neutral, 4=Disagree, 5=Strongly Disagree

Statements	1	2	3	4	5
a) A clear statement of the purpose of the tax regulation					
b) Capacity for regular review of the tax regulation					
c) Capacity for timely review of the tax regulation					

2) The presence of the following features in the petroleum tax system assists compliance with the Nigerian petroleum tax regulations:

1= Strongly Agree, 2=Agree, 3=Neutral, 4=Disagree, 5=Strongly Disagree

Statements	1	2	3	4	5
a) Database for petroleum taxes paid					
b) Adequate numbers of government petroleum taxation experts					
c) Tax officials' adequate knowledge of the oil industry					

3) Each of the following tax policies helps achieve fast payment of petroleum taxes in Nigeria.

1= Strongly Agree, 2=Agree, 3=Neutral, 4=Disagree, 5=Strongly Disagree

Statements	1	2	3	4	5
a) Self-assessment of tax liabilities					
b) Monthly instalment payments for tax liabilities					
c) Penalties for late payment					

Section Five (Flexibility of the Nigerian Petroleum Tax System)

Please answer each statement by ticking the appropriate box:

1) The Nigerian petroleum tax system has the capacity to adjust to each of the following situations:

1= Strongly Agree, 2=Agree, 3=Neutral, 4=Disagree, 5=Strongly Disagree

Statements	1	2	3	4	5
a) Changes in tax regulations in other countries					
b) Increase in investors risk of making loss					

2) The Nigerian petroleum tax system is designed to:

1= Strongly Agree, 2=Agree, 3=Neutral, 4=Disagree, 5=Strongly Disagree

Statements	1	2	3	4	5
a) Increase government take when the profitability of oil companies' increases					
b) Decrease government take when the profitability of oil companies' decreases					

3) The control mechanism in the Nigerian petroleum tax system is likely to detect:

1= Strongly Agree, 2=Agree, 3=Neutral, 4=Disagree, 5=Strongly Disagree

Statements	1	2	3	4	5
a) Fraudulent practices by tax officials					
b) Underreporting of production volume by multinational oil companies					

4) The Nigerian petroleum tax system is designed to cope with the following conditions:

1= Strongly Agree, 2=Agree, 3=Neutral, 4=Disagree, 5=Strongly Disagree

Statements	1	2	3	4	5
a) Multinational oil companies fear that government might not honour contract terms in the long run					
b) Public concern that multinational oil companies are receiving too great a share of the oil revenue					

5) The Nigerian government reacts appropriately to:

1= Strongly Agree, 2=Agree, 3=Neutral, 4=Disagree, 5=Strongly Disagree

Statements	1	2	3	4	5
a) Requests for a greater share of oil rent by communities in the oil region					
b) Requests for compensation by communities in the oil region for damages to their environment					

END OF QUESTIONNAIRE

Appendix D

Nigerian National Petroleum Corporation

Hypotheses	SA	A	N	D	SD	Total
H1₁: <i>Nigeria's petroleum tax system is a fair representation of the interests of the government and the MOCs.</i>						
a) Equitable distribution of revenue						
b) Increase in government share of revenue	1	3	2	5	4	15
c) Influence of tax incentives on MOCs investment decisions:	2	1	4	7	1	15
• Investment tax credit						
• Accelerated depreciation	1	11	2	0	1	15
• Guaranteed profit margin	3	4	5	2	1	15
• Cost offset						
d) Distribution of tax revenue among the tiers of government in Nigeria:	4	6	4	1	0	15
• Federal government	4	3	7	1	0	15
• State government						
• Local government	6	5	1	1	2	15
e) Incentives for enhancing the international competitiveness of the Nigerian petroleum tax system:	2	2	0	7	4	15
• Tax incentive package to investors	1	3	0	8	3	15
• Allocation of part of the oil production to MOCs						
• Guaranteed minimum rate of return to MOCs	4	4	4	0	3	15
• Compensation of investors for any increase in risks	6	4	1	3	1	15
	2	5	3	3	2	15
	2	5	6	2	0	15
Total	38 19%	56 29%	39 20%	40 21%	22 11%	195 100%
H1₂: <i>Nigeria's petroleum tax instruments are suitable for achieving the objectives set for the petroleum tax system</i>						
a) Bonuses and fees	0	7	3	4	1	15
b) Royalty	2	7	5	1	0	15
c) Income tax	1	8	3	3	0	15
d) Participation	2	5	4	1	3	15
e) Production sharing	3	7	2	2	1	15
Total	8 11%	34 45%	17 23%	11 15%	5 6%	75 100%
H1₃: <i>Nigeria has in place a sound administrative plan for petroleum tax matters</i>						
a) Nigeria's administrative plan for petroleum tax matters is comprehensive	0	3	3	7	2	15
b) Nigeria's administrative plan for petroleum tax matters is flexible	0	2	6	6	1	15
c) Nigeria's administrative plan for petroleum tax matters is cost effective	0	2	2	6	5	15
Total	0 0%	7 16%	11 24%	19 42%	8 18%	45 100%
H1₄: <i>The implementation processes for Nigeria's petroleum tax system are effective</i>						
a) Government support for effective administration:						
• Recruitment of required staff	0	8	3	3	1	15
• Financial support	1	7	2	4	1	15
• Training and development of staff	0	6	4	4	1	15

<ul style="list-style-type: none"> Improvement of staff welfare 	2	6	2	3	2	15
b) Adequacy in the finance of petroleum tax agencies						
<ul style="list-style-type: none"> Federal Inland Revenue Services 	2	9	3	1	0	15
<ul style="list-style-type: none"> Department of Petroleum Resources 	1	8	5	1	0	15
<ul style="list-style-type: none"> Central Bank of Nigeria 	5	8	2	0	0	15
<ul style="list-style-type: none"> National Petroleum Managements Services 	0	9	4	1	1	15
<ul style="list-style-type: none"> Ministry of Petroleum Resources 	1	7	3	2	2	15
c) Features of Nigerian petroleum tax agencies:						
<ul style="list-style-type: none"> Appropriate number of petroleum professionals 	2	4	4	5	0	15
<ul style="list-style-type: none"> Good information system 	0	3	3	7	2	15
<ul style="list-style-type: none"> Information system linked to other agencies' information systems 	0	0	7	6	2	15
<ul style="list-style-type: none"> Access to national petroleum database 	0	1	6	3	5	15
d) Nigeria's petroleum tax administrative agencies:						
<ul style="list-style-type: none"> Work as an effective team 	3	2	3	6	1	15
<ul style="list-style-type: none"> Are effective in detecting non-compliance 	2	3	4	5	1	15
<ul style="list-style-type: none"> Prosecute companies' for non-compliance 	0	2	5	3	5	15
Total	19	83	60	54	24	240
	8%	35%	25%	22%	10%	100%
H1₅: <i>The compliance mechanisms relating to the Nigerian petroleum tax system are adequate</i>						
a) Features designed to assist compliance:						
<ul style="list-style-type: none"> A clear statement of purpose of the tax regulation 	0	7	2	2	4	15
<ul style="list-style-type: none"> Capacity for regular review of the tax regulations 	0	0	7	7	1	15
<ul style="list-style-type: none"> Capacity for timely review of the tax regulation 	0	2	6	5	2	15
<ul style="list-style-type: none"> Database for petroleum taxes paid 	4	1	4	3	3	15
<ul style="list-style-type: none"> Adequate numbers of government petroleum taxation experts 	2	5	3	2	3	15
<ul style="list-style-type: none"> Tax officials' adequate knowledge of the oil industry 	4	3	4	1	3	15
b) Policies for fast payment of petroleum taxes						
<ul style="list-style-type: none"> Self-assessment of tax liabilities 	1	7	2	5	0	15
<ul style="list-style-type: none"> Monthly instalment payments for tax liabilities 	1	7	1	4	2	15
<ul style="list-style-type: none"> Penalties for late payment 	5	2	4	4	0	15
Total	17	34	33	33	18	135
	13%	26%	24%	24%	13%	100%
H1₆: <i>The Nigerian petroleum tax system is reactive to changes in factors that significantly affect tax matters</i>						
a) Capacity to adjust to the following situations:						
<ul style="list-style-type: none"> Changes in tax regulations in other countries 	0	2	5	6	2	15
<ul style="list-style-type: none"> Increase in investors risk of making loss 	0	2	8	5	0	15
b) Nigerian petroleum tax system is designed to achieve an:						
<ul style="list-style-type: none"> Increase in government take when the profitability of oil companies' increases 	4	3	3	3	2	15
<ul style="list-style-type: none"> Decrease government take when the profitability of oil companies' decreases 	1	3	1	7	3	15

c) Control mechanism in the Nigerian petroleum tax system is likely to detect:						
• Fraudulent practices by tax officials	2	2	5	3	3	15
• Underreporting of production volume by multinational oil companies	2	1	1	7	4	15
d) The Nigerian petroleum tax system is designed to cope with the following conditions:						
• MOCs fear that government might not honour contract terms in the long run	0	9	2	2	2	15
• Public concern that multinational oil companies are receiving too great a share of the oil revenue	7	2	5	1	0	15
e) The Nigerian government reacts appropriately to:						
• Requests for a greater share of oil rent by communities in the oil region	2	1	7	4	1	15
• Requests for compensation by communities in the oil region for damages to their environment	1	5	4	5	0	15
Total	19 13%	30 20%	41 27%	43 29%	17 11%	150 100%

Federal Inland Revenue Services

Hypotheses	SA	A	N	D	SD	Total
H1₁: <i>Nigeria's petroleum tax system is a fair representation of the interests of the government and the MOCs.</i>						
a) Equitable distribution of revenue	1	3	4	5	0	13
b) Increase in government share of revenue	8	5	0	0	0	13
c) Influence of tax incentives on MOCs investment decisions:						
• Investment tax credit	6	7	0	0	0	13
• Accelerated depreciation	2	8	3	0	0	13
• Guaranteed profit margin	3	6	4	0	0	13
• Cost offset	2	4	5	2	0	13
d) Distribution of tax revenue among the tiers of government in Nigeria:						
• Federal government	9	4	0	0	0	13
• State government	0	5	1	7	0	13
• Local government	0	1	5	7	0	13
e) Incentives for enhancing the international competitiveness of the Nigerian petroleum tax system:						
• Tax incentive package to investors						
• Allocation of part of the oil production to MOCs	5	8	0	0	0	13
• Guaranteed minimum rate of return to MOCs	1	5	4	1	2	13
• Compensation of investors for any increase in risks	2	7	4	0	0	13
	0	6	6	0	1	13
Total	39 23%	69 41%	36 21%	22 13%	3 2%	169 100%

H1₂: Nigeria's petroleum tax instruments are suitable for achieving the objectives set for the petroleum tax system	3	9	1	0	0	13
a) Bonuses and fees	5	8	0	0	0	13
b) Royalty	1	10	0	2	0	13
c) Income tax	1	6	5	1	0	13
d) Participation	5	6	1	1	0	13
e) Production sharing						
Total	15 23%	39 60%	7 11%	4 6%	0 0%	65 100%
H1₃: Nigeria has in place a sound administrative plan for petroleum tax matters						
a) Nigeria's administrative plan for petroleum tax matters is comprehensive	1	5	4	3	0	13
b) Nigeria's administrative plan for petroleum tax matters is flexible	1	4	6	2	0	13
c) Nigeria's administrative plan for petroleum tax matters is cost effective	1	2	5	5	0	13
Total	3 8%	11 28%	15 38%	10 26%	0 0%	39 100%
H1₄: The implementation processes for Nigeria's petroleum tax system are effective						
a) Government support for effective administration:						
• Recruitment of required staff	1	5	0	7	0	13
• Financial support	2	3	1	6	1	13
• Training and development of staff	0	5	2	6	0	13
• Improvement of staff welfare	0	8	1	4	0	13
b) Adequacy in the finance of petroleum tax agencies						
• Federal Inland Revenue Services	2	9	1	1	0	13
• Department of Petroleum Resources	4	7	1	1	0	13
• Central Bank of Nigeria	5	7	1	0	0	13
• National Petroleum Managements Services	3	7	1	2	0	13
• Ministry of Petroleum Resources	1	7	2	3	0	13
c) Features of Nigerian petroleum tax agencies:						
• Appropriate number of petroleum professionals	5	1	2	5	0	13
• Good information system	0	7	2	3	1	13
• Information system linked to other agencies' information systems	0	5	1	4	3	13
• Access to national petroleum database	0	5	2	4	2	13
d) Nigeria's petroleum tax administrative agencies:						
• Work as an effective team	1	8	0	3	1	13
• Are effective in detecting non-compliance	0	7	2	4	0	13
• Prosecute companies' for non-compliance	0	8	1	4	0	13
Total	24 12%	99 48%	20 10%	57 27%	8 3%	208 100%
H1₅: The compliance mechanisms relating to the Nigerian petroleum tax system are adequate						

a) Features designed to assist compliance:						
• A clear statement of purpose of the tax regulation	3	8	0	2	0	13
• Capacity for regular review of the tax regulations	1	7	1	4	0	13
• Capacity for timely review of the tax regulation	1	5	2	4	1	13
• Database for petroleum taxes paid	6	5	0	2	0	13
• Adequate numbers of government petroleum taxation experts	5	4	2	2	0	13
• Tax officials' adequate knowledge of the oil industry	7	4	0	2	0	13
b) Policies for fast payment of petroleum taxes						
• Self-assessment of tax liabilities	7	4	1	1	0	13
• Monthly instalment payments for tax liabilities	4	5	4	0	0	13
• Penalties for late payment	2	4	1	5	1	13
Total	36 31%	46 39%	11 9%	22 19%	2 2%	117 100%
H16: <i>The Nigerian petroleum tax system is reactive to changes in factors that significantly affect tax matters</i>						
a) Capacity to adjust to the following situations:						
• Changes in tax regulations in other countries	0	5	1	7	0	13
• Increase in investors risk of making loss	0	3	7	3	0	13
b) Nigerian petroleum tax system is designed to achieve an:						
• Increase in government take when the profitability of oil companies' increases	5	5	2	1	0	13
• Decrease government take when the profitability of oil companies' decreases	2	5	2	0	4	13
c) Control mechanism in the Nigerian petroleum tax system is likely to detect:						
• Fraudulent practices by tax officials	3	7	0	3	0	13
• Underreporting of production volume by multinational oil companies	3	2	0	5	3	13
d) The Nigerian petroleum tax system is designed to cope with the following conditions:						
• MOCs fear that government might not honour contract terms in the long run	0	5	1	7	0	13
• Public concern that multinational oil companies are receiving too great a share of the oil revenue	2	7	2	2	0	13
e) The Nigerian government reacts appropriately to:						
• Requests for a greater share of oil rent by communities in the oil region	1	9	1	1	1	13

<ul style="list-style-type: none"> Requests for compensation by communities in the oil region for damages to their environment 	4	5	1	3	0	13
Total	20 15%	53 41%	17 13%	32 25%	8 6%	130 100%

Central Bank of Nigeria

Hypotheses	SA	A	N	D	SD	Total
H1₁: Nigeria's petroleum tax system is a fair representation of the interests of the government and the MOCs.						
a) Equitable distribution of revenue	1	4	1	4	0	10
b) Increase in government share of revenue	7	2	0	1	0	10
c) Influence of tax incentives on MOCs investment decisions:						
• Investment tax credit	5	3	1	1	0	10
• Accelerated depreciation	3	3	2	1	1	10
• Guaranteed profit margin	2	5	3	0	0	10
• Cost offset	2	8	0	0	0	10
d) Distribution of tax revenue among the tiers of government in Nigeria:						
• Federal government	4	2	2	1	1	10
• State government	0	3	4	1	2	10
• Local government	0	4	3	1	2	10
e) Incentives for enhancing the international competitiveness of the Nigerian petroleum tax system:						
• Tax incentive package to investors	4	6	0	0	0	10
• Allocation of part of the oil production to MOCs	2	7	0	0	1	10
• Guaranteed minimum rate of return to MOCs	2	4	3	1	0	10
• Compensation of investors for any increase in risks	1	5	2	2	0	10
Total	33 25%	56 45%	21 16%	13 10%	7 4%	130 100%
H1₂: Nigeria's petroleum tax instruments are suitable for achieving the objectives set for the petroleum tax system						
a) Bonuses and fees	2	5	3	0	0	10
b) Royalty	2	7	1	0	0	10
c) Income tax	0	6	4	0	0	10
d) Participation	2	4	1	3	0	10
e) Production sharing	2	3	3	2	0	10
Total	8 16%	25 50%	12 24%	5 10%	0 0%	50 100%
H1₃: Nigeria has in place a sound administrative plan for petroleum tax matters						
a) Nigeria's administrative plan for petroleum tax matters is comprehensive	3	3	2	1	1	10
b) Nigeria's administrative plan for						

petroleum tax matters is flexible	3	2	3	2	0	10
c) Nigeria's administrative plan for petroleum tax matters is cost effective	2	2	2	3	1	10
Total	8 27%	7 23%	7 23%	6 20%	2 7%	30 100%
H14: The implementation processes for Nigeria's petroleum tax system are effective						
a) Government support for effective administration:						
• Recruitment of required staff	2	6	2	0	0	10
• Financial support	2	5	0	2	1	10
• Training and development of staff	2	5	2	1	0	10
• Improvement of staff welfare	3	4	1	2	0	10
b) Adequacy in the finance of petroleum tax agencies						
• Federal Inland Revenue Services	1	6	2	1	0	10
• Department of Petroleum Resources	3	5	1	1	0	10
• Central Bank of Nigeria	5	3	2	0	0	10
• National Petroleum Managements Services	3	5	2	0	0	10
• Ministry of Petroleum Resources	4	5	1	0	0	10
c) Features of Nigerian petroleum tax agencies:						
• Appropriate number of petroleum professionals	3	5	2	0	0	10
• Good information system	1	4	2	3	0	10
• Information system linked to other agencies' information systems	1	4	1	3	1	10
• Access to national petroleum database	3	3	0	4	0	10
d) Nigeria's petroleum tax administrative agencies:						
• Work as an effective team	3	3	3	1	0	10
• Are effective in detecting non-compliance	1	6	1	2	0	10
• Prosecute companies' for non-compliance	3	1	3	2	1	10
Total	40 25%	70 44%	25 16%	22 14%	3 1%	160 100%
H15: The compliance mechanisms relating to the Nigerian petroleum tax system are adequate						
a) Features designed to assist compliance:						
• A clear statement of purpose of the tax regulation	0	8	1	1	0	10
• Capacity for regular review of the tax regulations	1	6	2	0	1	10
• Capacity for timely review of the tax regulation	3	3	2	1	1	10
• Database for petroleum taxes paid	2	4	2	2	0	10
• Adequate numbers of government petroleum taxation experts	3	4	1	2	0	10
• Tax officials' adequate knowledge of the oil industry	4	2	3	1	0	10
b) Policies for fast payment of petroleum taxes						

<ul style="list-style-type: none"> • Self-assessment of tax liabilities 	2	7	0	1	0	10
<ul style="list-style-type: none"> • Monthly instalment payments for tax liabilities 	2	7	1	0	0	10
<ul style="list-style-type: none"> • Penalties for late payment 	2	6	1	1	0	10
Total	19 21%	47 52%	13 15%	9 10%	2 2%	90 100%
H16: <i>The Nigerian petroleum tax system is reactive to changes in factors that significantly affect tax matters</i>						
a) Capacity to adjust to the following situations:						
<ul style="list-style-type: none"> • Changes in tax regulations in other countries 	2	5	1	1	1	10
<ul style="list-style-type: none"> • Increase in investors risk of making loss 	0	6	2	1	1	10
b) Nigerian petroleum tax system is designed to achieve an:						
<ul style="list-style-type: none"> • Increase in government take when the profitability of oil companies' increases 	2	4	3	1	0	10
<ul style="list-style-type: none"> • Decrease government take when the profitability of oil companies' decreases 	1	5	2	2	0	10
c) Control mechanism in the Nigerian petroleum tax system is likely to detect:						
<ul style="list-style-type: none"> • Fraudulent practices by tax officials 	2	4	2	1	1	10
<ul style="list-style-type: none"> • Underreporting of production volume by multinational oil companies 	1	6	1	1	1	10
d) The Nigerian petroleum tax system is designed to cope with the following conditions:						
<ul style="list-style-type: none"> • MOCs fear that government might not honour contract terms in the long run 	1	5	2	1	1	10
<ul style="list-style-type: none"> • Public concern that multinational oil companies are receiving too great a share of the oil revenue 	1	4	3	2	0	10
e) The Nigerian government reacts appropriately to:						
<ul style="list-style-type: none"> • Requests for a greater share of oil rent by communities in the oil region 	3	3	1	3	0	10
<ul style="list-style-type: none"> • Requests for compensation by communities in the oil region for damages to their environment 	4	2	1	2	1	10
Total	17 17%	44 44%	18 18%	15 15%	6 6%	100 100%

Ministry of Petroleum Resources

Hypotheses	SA	A	N	D	SD	Total
<p>H1₁: <i>Nigeria's petroleum tax system is a fair representation of the interests of the government and the MOCs.</i></p> <p>a) Equitable distribution of revenue</p> <p>b) Increase in government share of revenue</p> <p>c) Influence of tax incentives on MOCs investment decisions:</p> <ul style="list-style-type: none"> • Investment tax credit • Accelerated depreciation • Guaranteed profit margin • Cost offset <p>d) Distribution of tax revenue among the tiers of government in Nigeria:</p> <ul style="list-style-type: none"> • Federal government • State government • Local government <p>e) Incentives for enhancing the international competitiveness of the Nigerian petroleum tax system:</p> <ul style="list-style-type: none"> • Tax incentive package to investors • Allocation of part of the oil production to MOCs • Guaranteed minimum rate of return to MOCs • Compensation of investors for any increase in risks 	0 2 0 0 2 2 3 0 0 0 0 1 0 2	0 2 6 0 2 0 3 0 0 0 3 3 4 2	1 1 1 5 0 3 1 1 1 2 2 2 1 2	5 2 0 2 2 2 0 6 4 2 1 1 0	1 0 0 0 1 0 0 0 2 0 0 0 3	7 7 7 7 7 7 7 7 7 7 7 7 7 7
Total	12 13%	25 27%	21 23%	27 30%	6 7%	91 100%
<p>H1₂: <i>Nigeria's petroleum tax instruments are suitable for achieving the objectives set for the petroleum tax system</i></p> <p>a) Bonuses and fees</p> <p>b) Royalty</p> <p>c) Income tax</p> <p>d) Participation</p> <p>e) Production sharing</p>	0 1 0 0 0	1 2 3 1 3	3 1 2 3 1	3 1 2 3 0	0 2 0 0 3	7 7 7 7 7
Total	1 3%	10 29%	10 29%	9 25%	5 14%	35 100%
<p>H1₃: <i>Nigeria has in place a sound administrative plan for petroleum tax matters</i></p> <p>a) Nigeria's administrative plan for petroleum tax matters is comprehensive</p> <p>b) Nigeria's administrative plan for petroleum tax matters is flexible</p> <p>c) Nigeria's administrative plan for petroleum tax matters is cost effective</p>	0 0 0	0 3 0	3 2 2	2 2 2	2 0 3	7 7 7

Total	0 0%	3 14%	7 33%	6 29%	5 24%	21 100%
H1₄: The implementation processes for Nigeria's petroleum tax system are effective						
a) Government support for effective administration:						
• Recruitment of required staff	2	2	0	2	1	7
• Financial support	0	1	4	2	0	7
• Training and development of staff	3	2	1	1	0	7
• Improvement of staff welfare	3	1	1	2	0	7
b) Adequacy in the finance of petroleum tax agencies			0	1	0	7
• Federal Inland Revenue Services	0	6	2	0	0	7
• Department of Petroleum Resources	1	4	0	0	0	7
• Central Bank of Nigeria	2	5				
• National Petroleum Managements Services	0	5	2	0	0	7
• Ministry of Petroleum Resources	0	2	2	2	1	7
c) Features of Nigerian petroleum tax agencies:						
• Appropriate number of petroleum professionals	0	2	2	3	0	7
• Good information system	0	1	1	5	0	7
• Information system linked to other agencies' information systems	0	0	5	2	0	7
• Access to national petroleum database	0	0	3	2	2	7
d) Nigeria's petroleum tax administrative agencies:						
• Work as an effective team	0	0	3	4	0	7
• Are effective in detecting non-compliance	0	3	2	2	0	7
• Prosecute companies' for non-compliance	0	3	2	2	0	7
Total	11 10%	37 33%	30 27%	30 27%	4 3%	112 100%
H1₅: The compliance mechanisms relating to the Nigerian petroleum tax system are adequate						
a) Features designed to assist compliance:						
• A clear statement of purpose of the tax regulation	0	1	5	1	0	7
• Capacity for regular review of the tax regulations	0	0	3	4	0	7
• Capacity for timely review of the tax regulation	0	0	3	4	0	7
• Database for petroleum taxes paid	2	2	0	3	0	7
• Adequate numbers of government petroleum taxation experts	1	1	2	3	0	7
• Tax officials' adequate knowledge of the oil industry	2	0	1	3	1	7
b) Policies for fast payment of petroleum taxes						
• Self-assessment of tax liabilities	3	1	1	2	0	7
• Monthly instalment payments for tax liabilities	1	3	2	0	1	7

• Penalties for late payment	4	2	1	0	0	7
Total	13 21%	10 16%	18 29%	20 32%	2 2%	63 100%
H16: <i>The Nigerian petroleum tax system is reactive to changes in factors that significantly affect tax matters</i>						
a) Capacity to adjust to the following situations:						
• Changes in tax regulations in other countries	0	2	2	2	1	7
• Increase in investors risk of making loss	0	0	5	2	0	7
b) Nigerian petroleum tax system is designed to achieve an:						
• Increase in government take when the profitability of oil companies' increases	3	0	2	2	0	7
• Decrease government take when the profitability of oil companies' decreases	3	2	2	0	0	7
c) Control mechanism in the Nigerian petroleum tax system is likely to detect:						
• Fraudulent practices by tax officials	1	2	2	2	0	7
• Underreporting of production volume by multinational oil companies	1	2	2	2	0	7
d) The Nigerian petroleum tax system is designed to cope with the following conditions:						
• MOCs fear that government might not honour contract terms in the long run	0	2	2	3	0	7
• Public concern that multinational oil companies are receiving too great a share of the oil revenue	1	1	3	2	0	7
e) The Nigerian government reacts appropriately to:						
• Requests for a greater share of oil rent by communities in the oil region	0	0	1	5	1	7
• Requests for compensation by communities in the oil region for damages to their environment	1	2	1	2	1	7
Total	10 14%	13 19%	22 31%	22 31%	3 5%	70 100%

Multinational Oil Companies

Hypotheses	SA	A	N	D	SD	Total
H1₁: <i>Nigeria's petroleum tax system is a fair representation of the interests of the government and the MOCs.</i>						
a) Equitable distribution of revenue	2	2	2	0	0	6
b) Increase in government share of revenue	2	2	1	1	0	6
c) Influence of tax incentives on MOCs investment decisions:						
• Investment tax credit	1	2	1	2	0	6
• Accelerated depreciation	0	2	2	0	2	6
• Guaranteed profit margin	0	4	0	2	0	6
• Cost offset	2	1	1	1	1	6
d) Distribution of tax revenue among the tiers of government in Nigeria:						
• Federal government	2	2	1	1	0	6
• State government	0	2	3	0	1	6
• Local government	1	2	2	1	0	6
e) Incentives for enhancing the international competitiveness of the Nigerian petroleum tax system:						
• Tax incentive package to investors	1	2	3	0	0	6
• Allocation of part of the oil production to MOCs	1	1	3	0	1	6
• Guaranteed minimum rate of return to MOCs	0	2	2	1	1	6
• Compensation of investors for any increase in risks	0	3	2	1	0	6
Total	12 15%	27 35%	23 29%	10 13%	6 8%	78 100%
H1₂: <i>Nigeria's petroleum tax instruments are suitable for achieving the objectives set for the petroleum tax system</i>						
a) Bonuses and fees	1	2	3	0	0	6
b) Royalty	0	5	1	0	0	6
c) Income tax	1	2	2	1	0	6
d) Participation	1	0	5	0	0	6
e) Production sharing	0	0	4	2	0	6
Total	3 10%	9 30%	15 50%	3 10%	0 0%	30 100%
H1₃: <i>Nigeria has in place a sound administrative plan for petroleum tax matters</i>						
a) Nigeria's administrative plan for petroleum tax matters is comprehensive	0	2	4	0	0	6
b) Nigeria's administrative plan for petroleum tax matters is flexible	1	2	1	2	0	6
c) Nigeria's administrative plan for petroleum tax matters is cost effective	1	3	0	1	1	6
Total	2 11%	7 39%	5 28%	3 17%	1 5%	18 100%
H1₄: <i>The implementation processes for Nigeria's petroleum tax system are effective</i>						
a) Government support for effective administration:						
• Recruitment of required staff	0	2	1	1	2	6
• Financial support	0	1	3	1	1	6

<ul style="list-style-type: none"> • Training and development of staff 	0	4	1	1	0	6
<ul style="list-style-type: none"> • Improvement of staff welfare 	0	3	3	0	0	6
b) Adequacy in the finance of petroleum tax agencies						
<ul style="list-style-type: none"> • Federal Inland Revenue Services 	1	3	1	1	0	6
<ul style="list-style-type: none"> • Department of Petroleum Resources 	3	1	1	1	0	6
<ul style="list-style-type: none"> • Central Bank of Nigeria 						
<ul style="list-style-type: none"> • National Petroleum Managements Services 	4	0	2	0	0	6
<ul style="list-style-type: none"> • Ministry of Petroleum Resources 	1	1	4	0	0	6
c) Features of Nigerian petroleum tax agencies:	1	2	3	0	0	6
<ul style="list-style-type: none"> • Appropriate number of petroleum professionals 	0	0	3	3	0	6
<ul style="list-style-type: none"> • Good information system 	0	2	2	0	2	6
<ul style="list-style-type: none"> • Information system linked to other agencies' information systems 	1	1	3	0	1	6
<ul style="list-style-type: none"> • Access to national petroleum database 	0	3	2	0	1	6
d) Nigeria's petroleum tax administrative agencies:						
<ul style="list-style-type: none"> • Work as an effective team 	0	0	2	3	1	6
<ul style="list-style-type: none"> • Are effective in detecting non-compliance 	1	3	1	1	0	6
<ul style="list-style-type: none"> • Prosecute companies' for non-compliance 	0	1	3	1	1	6
Total	12 13%	27 28%	35 37%	13 14%	9 9%	96 100%
H1₅: The compliance mechanisms relating to the Nigerian petroleum tax system are adequate						
a) Features designed to assist compliance:						
<ul style="list-style-type: none"> • A clear statement of purpose of the tax regulation 	0	3	1	1	1	6
<ul style="list-style-type: none"> • Capacity for regular review of the tax regulations 	0	2	3	1	0	6
<ul style="list-style-type: none"> • Capacity for timely review of the tax regulation 	0	4	1	1	0	6
<ul style="list-style-type: none"> • Database for petroleum taxes paid 	0	5	0	1	0	6
<ul style="list-style-type: none"> • Adequate numbers of government petroleum taxation experts 	0	1	4	0	1	6
<ul style="list-style-type: none"> • Tax officials' adequate knowledge of the oil industry 	0	5	1	0	0	6
b) Policies for fast payment of petroleum taxes						
<ul style="list-style-type: none"> • Self-assessment of tax liabilities 	0	3	2	0	1	6
<ul style="list-style-type: none"> • Monthly instalment payments for tax liabilities 	0	2	4	0	0	6
<ul style="list-style-type: none"> • Penalties for late payment 	0	2	1	1	2	6
Total	0 0%	27 50%	17 32%	5 9%	5 9%	54 100%
H1₆: The Nigerian petroleum tax system is reactive to changes in factors that significantly affect tax matters						
a) Capacity to adjust to the following situations:						
<ul style="list-style-type: none"> • Changes in tax regulations in other countries 	1	2	3	0	0	6

<ul style="list-style-type: none"> • Increase in investors risk of making loss 	0	1	1	4	0	6
b) Nigerian petroleum tax system is designed to achieve an: <ul style="list-style-type: none"> • Increase in government take when the profitability of oil companies' increases • Decrease government take when the profitability of oil companies' decreases 	2	3	0	1	0	6
c) Control mechanism in the Nigerian petroleum tax system is likely to detect: <ul style="list-style-type: none"> • Fraudulent practices by tax officials • Underreporting of production volume by multinational oil companies 	1	3	1	1	0	6
d) The Nigerian petroleum tax system is designed to cope with the following conditions: <ul style="list-style-type: none"> • MOCs fear that government might not honour contract terms in the long run • Public concern that multinational oil companies are receiving too great a share of the oil revenue 	0	6	0	0	0	6
e) The Nigerian government reacts appropriately to: <ul style="list-style-type: none"> • Requests for a greater share of oil rent by communities in the oil region • Requests for compensation by communities in the oil region for damages to their environment 	2	4	0	0	0	6
	0	2	1	1	2	6
	2	2	0	1	1	6
Total	10 17%	28 46%	7 12%	12 20%	3 5%	60 100%

Accountant General's Office

Hypotheses	SA	A	N	D	SD	Total
H1₁: <i>Nigeria's petroleum tax system is a fair representation of the interests of the government and the MOCs.</i>						
a) Equitable distribution of revenue	0	1	2	2	1	6
b) Increase in government share of revenue	2	3	1	0	0	6
c) Influence of tax incentives on MOCs investment decisions:						
• Investment tax credit	2	3	1	0	0	6
• Accelerated depreciation	1	2	1	2	0	6
• Guaranteed profit margin	3	1	1	1	0	6
• Cost offset	2	1	2	0	1	6
d) Distribution of tax revenue among the tiers of government in Nigeria:						
• Federal government	3	2	0	0	1	6
• State government	1	1	2	0	2	6
• Local government	2	0	1	2	1	6
e) Incentives for enhancing the international competitiveness of the Nigerian petroleum tax system:						
• Tax incentive package to investors	2	3	0	1	0	6
• Allocation of part of the oil production to MOCs	4	1	0	0	1	6
• Guaranteed minimum rate of return to MOCs	2	1	3	0	0	6
• Compensation of investors for any increase in risks	2	0	2	2	0	6
Total	26 33%	19 24%	16 21%	10 13%	7 9%	78 100%
H1₂: <i>Nigeria's petroleum tax instruments are suitable for achieving the objectives set for the petroleum tax system</i>						
a) Bonuses and fees	4	0	1	1	0	6
b) Royalty	4	1	0	0	1	6
c) Income tax	5	0	0	1	0	6
d) Participation	3	2	0	0	1	6
e) Production sharing	3	1	1	0	1	6
Total	19 63%	4 13%	2 7%	2 7%	3 10%	30 100%
H1₃: <i>Nigeria has in place a sound administrative plan for petroleum tax matters</i>						
a) Nigeria's administrative plan for petroleum tax matters is comprehensive	1	2	3	0	0	6
b) Nigeria's administrative plan for petroleum tax matters is flexible	1	3	2	0	0	6
c) Nigeria's administrative plan for petroleum tax matters is cost effective	0	2	3	0	1	6
Total	2 11%	7 39%	8 44%	0 0%	1 6%	18 100%
H1₄: <i>The implementation processes for Nigeria's petroleum tax system are effective</i>						
a) Government support for effective administration:						

<ul style="list-style-type: none"> Recruitment of required staff 	4	1	1	0	0	6
<ul style="list-style-type: none"> Financial support 	3	2	1	0	0	6
<ul style="list-style-type: none"> Training and development of staff 	2	3	0	1	0	6
<ul style="list-style-type: none"> Improvement of staff welfare 	4	1	1	0	0	6
b) Adequacy in the finance of petroleum tax agencies						
<ul style="list-style-type: none"> Federal Inland Revenue Services 	4	1	1	0	0	6
<ul style="list-style-type: none"> Department of Petroleum Resources 	3	3	0	0	0	6
<ul style="list-style-type: none"> Central Bank of Nigeria 	5	0	1	0	0	6
<ul style="list-style-type: none"> National Petroleum Managements Services 	2	4	0	0	0	6
<ul style="list-style-type: none"> Ministry of Petroleum Resources 	4	1	1	0	0	6
c) Features of Nigerian petroleum tax agencies:						
<ul style="list-style-type: none"> Appropriate number of petroleum professionals 	2	0	4	0	0	6
<ul style="list-style-type: none"> Good information system 	2	2	2	0	0	6
<ul style="list-style-type: none"> Information system linked to other agencies' information systems 	1	3	1	1	0	6
<ul style="list-style-type: none"> Access to national petroleum database 	1	2	2	1	0	6
d) Nigeria's petroleum tax administrative agencies:						
<ul style="list-style-type: none"> Work as an effective team 	0	4	0	2	0	6
<ul style="list-style-type: none"> Are effective in detecting non-compliance 	1	4	1	0	0	6
<ul style="list-style-type: none"> Prosecute companies' for non-compliance 	1	1	4	0	0	6
Total	39 41%	32 33%	20 21%	5 5%	0 0%	96 100%
H1₅: The compliance mechanisms relating to the Nigerian petroleum tax system are adequate						
a) Features designed to assist compliance:						
<ul style="list-style-type: none"> A clear statement of purpose of the tax regulation 	3	1	1	1	0	6
<ul style="list-style-type: none"> Capacity for regular review of the tax regulations 	4	1	0	1	0	6
<ul style="list-style-type: none"> Capacity for timely review of the tax regulation 	4	1	0	1	0	6
<ul style="list-style-type: none"> Database for petroleum taxes paid 	2	2	2	0	0	6
<ul style="list-style-type: none"> Adequate numbers of government petroleum taxation experts 	2	1	2	0	1	6
<ul style="list-style-type: none"> Tax officials' adequate knowledge of the oil industry 	2	1	2	0	1	6
b) Policies for fast payment of petroleum taxes						
<ul style="list-style-type: none"> Self-assessment of tax liabilities 	2	4	0	0	0	6
<ul style="list-style-type: none"> Monthly instalment payments for tax liabilities 	4	0	1	0	1	6
<ul style="list-style-type: none"> Penalties for late payment 	5	1	0	0	0	6
Total	28 51%	12 22%	8 15%	3 6%	3 6%	54 100%
H1₆: The Nigerian petroleum tax system is reactive to changes in factors that significantly affect tax matters						
a) Capacity to adjust to the						

following situations:						
• Changes in tax regulations in other countries	1	3	1	1	0	6
• Increase in investors risk of making loss	1	0	4	1	0	6
b) Nigerian petroleum tax system is designed to achieve an:						
• Increase in government take when the profitability of oil companies' increases	5	1	0	0	0	6
• Decrease government take when the profitability of oil companies' decreases	2	0	4	0	0	6
c) Control mechanism in the Nigerian petroleum tax system is likely to detect:						
• Fraudulent practices by tax officials	2	4	0	0	0	6
• Underreporting of production volume by multinational oil companies	3	2	1	0	0	6
d) The Nigerian petroleum tax system is designed to cope with the following conditions:						
• MOCs fear that government might not honour contract terms in the long run	2	2	0	2	0	6
• Public concern that multinational oil companies are receiving too great a share of the oil revenue	2	1	2	1	0	6
e) The Nigerian government reacts appropriately to:						
• Requests for a greater share of oil rent by communities in the oil region	0	2	1	2	1	6
• Requests for compensation by communities in the oil region for damages to their environment	1	1	2	2	0	6
Total	19 32%	16 27%	15 25%	9 15%	1 1%	60 100%

Auditor General's Office

Hypotheses	SA	A	N	D	SD	Total
H1₁: <i>Nigeria's petroleum tax system is a fair representation of the interests of the government and the MOCs.</i>						
a) Equitable distribution of revenue	0	2	3	2	0	7
b) Increase in government share of revenue	1	3	2	1	0	7
c) Influence of tax incentives on MOCs investment decisions:						
• Investment tax credit	1	4	2	0	0	7
• Accelerated depreciation	0	3	2	2	0	7
• Guaranteed profit margin	0	5	2	0	0	7
• Cost offset	0	4	2	0	1	7
d) Distribution of tax revenue among the tiers of government in Nigeria:						
• Federal government	2	4	0	1	0	7
• State government	0	0	2	4	1	7
• Local government	0	0	1	5	1	7
e) Incentives for enhancing the international competitiveness of the Nigerian petroleum tax system:						
• Tax incentive package to investors	1	6	0	0	0	7
• Allocation of part of the oil production to MOCs	1	2	2	2	0	7
• Guaranteed minimum rate of return to MOCs	0	2	4	1	0	7
• Compensation of investors for any increase in risks	2	2	1	2	0	7
Total	8 9%	37 41%	23 25%	20 22%	3 3%	91 100%
H1₂: <i>Nigeria's petroleum tax instruments are suitable for achieving the objectives set for the petroleum tax system</i>						
a) Bonuses and fees	0	6	1	0	0	7
b) Royalty	1	6	0	0	0	7
c) Income tax	1	3	2	1	0	7
d) Participation	0	2	2	3	0	7
e) Production sharing	1	1	3	2	0	7
Total	3 9%	18 51%	8 23%	6 17%	0 0%	35 100%
H1₃: <i>Nigeria has in place a sound administrative plan for petroleum tax matters</i>						
a) Nigeria's administrative plan for petroleum tax matters is comprehensive	1	2	3	1	0	7
b) Nigeria's administrative plan for petroleum tax matters is flexible	0	4	2	1	0	7
c) Nigeria's administrative plan for petroleum tax matters is cost effective	0	1	3	2	1	7
Total	1 5%	7 33%	8 38%	4 19%	1 5%	21 100%
H1₄: <i>The implementation processes for Nigeria's petroleum tax system are effective</i>						
a) Government support for effective administration:						

<ul style="list-style-type: none"> Recruitment of required staff 	4	1	0	2	0	7
<ul style="list-style-type: none"> Financial support 	0	4	2	1	0	7
<ul style="list-style-type: none"> Training and development of staff 	2	4	0	1	0	7
<ul style="list-style-type: none"> Improvement of staff welfare 	2	4	0	1	0	7
b) Adequacy in the finance of petroleum tax agencies						
<ul style="list-style-type: none"> Federal Inland Revenue Services 	4	1	1	1	0	7
<ul style="list-style-type: none"> Department of Petroleum Resources 	5	1	0	1	0	7
<ul style="list-style-type: none"> Central Bank of Nigeria 	3	2	0	2	0	7
<ul style="list-style-type: none"> National Petroleum Managements Services 	0	5	1	1	0	7
<ul style="list-style-type: none"> Ministry of Petroleum Resources 	2	4	0	1	0	7
c) Features of Nigerian petroleum tax agencies:						
<ul style="list-style-type: none"> Appropriate number of petroleum professionals 	1	2	2	2	0	7
<ul style="list-style-type: none"> Good information system 	1	2	3	1	0	7
<ul style="list-style-type: none"> Information system linked to other agencies' information systems 	0	2	2	2	1	7
<ul style="list-style-type: none"> Access to national petroleum database 	0	4	1	2	0	7
d) Nigeria's petroleum tax administrative agencies:						
<ul style="list-style-type: none"> Work as an effective team 	0	6	1	0	0	7
<ul style="list-style-type: none"> Are effective in detecting non-compliance 	1	2	1	2	1	7
<ul style="list-style-type: none"> Prosecute companies' for non-compliance 	0	1	2	2	2	7
Total	25 22%	45 40%	16 14%	22 20%	4 4%	112 100%
H1₅: The compliance mechanisms relating to the Nigerian petroleum tax system are adequate						
a) Features designed to assist compliance:						
<ul style="list-style-type: none"> A clear statement of purpose of the tax regulation 	1	4	2	0	0	7
<ul style="list-style-type: none"> Capacity for regular review of the tax regulations 	0	5	1	1	0	7
<ul style="list-style-type: none"> Capacity for timely review of the tax regulation 	0	5	1	1	0	7
<ul style="list-style-type: none"> Database for petroleum taxes paid 	0	3	2	2	0	7
<ul style="list-style-type: none"> Adequate numbers of government petroleum taxation experts 	0	3	2	1	1	7
<ul style="list-style-type: none"> Tax officials' adequate knowledge of the oil industry 	0	4	0	2	1	7
b) Policies for fast payment of petroleum taxes						
<ul style="list-style-type: none"> Self-assessment of tax liabilities 	1	6	0	0	0	7
<ul style="list-style-type: none"> Monthly instalment payments for tax liabilities 	2	2	2	1	0	7
<ul style="list-style-type: none"> Penalties for late payment 	2	4	1	0	0	7
Total	6 10%	36 57%	11 17%	8 13%	2 3%	63 100%
H1₆: The Nigerian petroleum tax system is reactive to changes in factors that significantly affect tax matters						
a) Capacity to adjust to the following						

situations:						
• Changes in tax regulations in other countries	0	3	2	1	1	7
• Increase in investors risk of making loss	0	3	0	3	1	7
b) Nigerian petroleum tax system is designed to achieve an:						
• Increase in government take when the profitability of oil companies' increases	1	5	0	1	0	7
• Decrease government take when the profitability of oil companies' decreases	0	0	4	2	1	7
c) Control mechanism in the Nigerian petroleum tax system is likely to detect:						
• Fraudulent practices by tax officials	0	3	1	3	0	7
• Underreporting of production volume by multinational oil companies	1	4	1	0	1	7
d) The Nigerian petroleum tax system is designed to cope with the following conditions:						
• MOCs fear that government might not honour contract terms in the long run	1	3	2	1	0	7
• Public concern that multinational oil companies are receiving too great a share of the oil revenue	0	3	1	3	0	7
e) The Nigerian government reacts appropriately to:						
• Requests for a greater share of oil rent by communities in the oil region	0	3	1	3	0	7
• Requests for compensation by communities in the oil region for damages to their environment	0	3	0	3	1	7
Total	3 4%	30 43%	12 17%	20 29%	5 7%	70 100%

Nigeria Extractive Industries Transparency Initiative

Hypotheses	SA	A	N	D	SD	Total
H1₁: <i>Nigeria's petroleum tax system is a fair representation of the interests of the government and the MOCs.</i>						
a) Equitable distribution of revenue	0	0	1	3	0	4
b) Increase in government share of revenue	0	2	0	1	1	4
c) Influence of tax incentives on MOCs investment decisions:						
• Investment tax credit	0	4	0	0	0	4
• Accelerated depreciation	0	0	2	1	1	4
• Guaranteed profit margin	0	3	0	0	1	4
• Cost offset	0	4	0	0	0	4
d) Distribution of tax revenue among the tiers of government in Nigeria:						
• Federal government	0	2	0	1	1	4
• State government	0	0	1	3	0	4
• Local government	0	2	1	1	0	4
e) Incentives for enhancing the international competitiveness of the Nigerian petroleum tax system:						
• Tax incentive package to investors	0	3	0	1	0	4
• Allocation of part of the oil production to MOCs	0	3	1	0	0	4
• Guaranteed minimum rate of return to MOCs	0	3	0	0	1	4
• Compensation of investors for any increase in risks	0	3	0	0	1	4
Total	0 0%	29 55%	6 12%	11 21%	6 12%	52 100%
H1₂: <i>Nigeria's petroleum tax instruments are suitable for achieving the objectives set for the petroleum tax system</i>						
a) Bonuses and fees	2	2	0	0	0	4
b) Royalty	2	1	1	0	0	4
c) Income tax	2	2	0	0	0	4
d) Participation	3	0	1	0	0	4
e) Production sharing	3	1	0	0	0	4
Total	12 60%	6 30%	2 10%	0 0%	0 0%	20 100%
H1₃: <i>Nigeria has in place a sound administrative plan for petroleum tax matters</i>						
a) Nigeria's administrative plan for petroleum tax matters is comprehensive	0	0	1	3	0	4
b) Nigeria's administrative plan for petroleum tax matters is flexible	0	3	1	0	0	4
c) Nigeria's administrative plan for petroleum tax matters is cost effective	1	0	0	3	0	4
Total	1 8%	3 25%	2 17%	6 50%	0 0%	12 100%
H1₄: <i>The implementation processes for Nigeria's petroleum tax system are effective</i>						
a) Government support for effective administration:						
• Recruitment of required staff	1	1	0	2	0	4

<ul style="list-style-type: none"> Financial support Training and development of staff Improvement of staff welfare 	0	1	1	2	0	4
b) Adequacy in the finance of petroleum tax agencies	1	2	0	1	0	4
<ul style="list-style-type: none"> Federal Inland Revenue Services Department of Petroleum Resources Central Bank of Nigeria National Petroleum Managements Services Ministry of Petroleum Resources 	2	1	0	1	0	4
c) Features of Nigerian petroleum tax agencies:	0	1	1	2	0	4
<ul style="list-style-type: none"> Appropriate number of petroleum professionals Good information system Information system linked to other agencies' information systems Access to national petroleum database 	2	1	1	0	0	4
d) Nigeria's petroleum tax administrative agencies:	1	1	0	2	0	4
<ul style="list-style-type: none"> Work as an effective team Are effective in detecting non-compliance Prosecute companies' for non-compliance 	1	1	1	1	0	4
Total	10 16%	16 25%	7 11%	25 39%	6 9%	64 100%
H15: <i>The compliance mechanisms relating to the Nigerian petroleum tax system are adequate</i>						
a) Features designed to assist compliance:						
<ul style="list-style-type: none"> A clear statement of purpose of the tax regulation Capacity for regular review of the tax regulations Capacity for timely review of the tax regulation Database for petroleum taxes paid Adequate numbers of government petroleum taxation experts Tax officials' adequate knowledge of the oil industry 	2	2	0	0	0	4
b) Policies for fast payment of petroleum taxes	0	3	0	1	0	4
<ul style="list-style-type: none"> Self-assessment of tax liabilities Monthly instalment payments for tax liabilities Penalties for late payment 	0	1	1	2	0	4
Total	4 11%	17 47%	3 8%	12 34%	0 0%	36 100%
H16: <i>The Nigerian petroleum tax system is reactive to changes in factors that significantly affect tax matters</i>						
a) Capacity to adjust to the following situations:						
<ul style="list-style-type: none"> Changes in tax regulations 	1	0	1	2	0	4

in other countries						
• Increase in investors risk of making loss	0	2	0	2	0	4
b) Nigerian petroleum tax system is designed to achieve an:						
• Increase in government take when the profitability of oil companies' increases	1	3	0	0	0	4
• Decrease government take when the profitability of oil companies' decreases	0	1	1	1	1	4
c) Control mechanism in the Nigerian petroleum tax system is likely to detect:						
• Fraudulent practices by tax officials	1	2	0	1	0	4
• Underreporting of production volume by multinational oil companies	0	3	0	1	0	4
d) The Nigerian petroleum tax system is designed to cope with the following conditions:						
• MOCs fear that government might not honour contract terms in the long run	1	1	0	2	0	4
• Public concern that multinational oil companies are receiving too great a share of the oil revenue	1	3	0	0	0	4
e) The Nigerian government reacts appropriately to:						
• Requests for a greater share of oil rent by communities in the oil region	0	1	1	2	0	4
• Requests for compensation by communities in the oil region for damages to their environment	0	1	1	2	0	4
Total	5 13%	17 42%	4 10%	13 33%	1 2%	40 100%

National assembly

Hypotheses	SA	A	N	D	SD	Total
H1₁: Nigeria's petroleum tax system is a fair representation of the interests of the government and the MOCs.						
a) Equitable distribution of revenue	1	1	1	8	0	11
b) Increase in government share of revenue	1	7	1	2	0	11
c) Influence of tax incentives on MOCs investment decisions:						
• Investment tax credit	0	7	3	1	0	11
• Accelerated depreciation	1	3	1	6	0	11
• Guaranteed profit margin	3	8	0	0	0	11
• Cost offset						
d) Distribution of tax revenue among the tiers of government in Nigeria:	2	6	3	0	0	11
• Federal government						
• State government						
• Local government	4	6	0	1	0	11
e) Incentives for enhancing the international competitiveness of the Nigerian petroleum tax system:	0	2	1	5	3	11
• Tax incentive package to investors	0	1	0	7	3	11
• Allocation of part of the oil production to MOCs						
• Guaranteed minimum rate of return to MOCs	1	8	1	1	0	11
• Compensation of investors for any increase in risks	2	7	0	2	0	11
	2	8	1	0	0	11
	1	2	2	4	2	11
Total	18 13%	66 46%	14 10%	37 26%	8 5%	143 100%
H1₂: Nigeria's petroleum tax instruments are suitable for achieving the objectives set for the petroleum tax system						
a) Bonuses and fees	3	4	3	1	0	11
b) Royalty	3	2	3	2	1	11
c) Income tax	1	7	1	2	0	11
d) Participation	0	4	4	3	0	11
e) Production sharing	2	4	1	4	0	11
Total	9 16%	21 38%	12 22%	12 22%	1 2%	55 100%
H1₃: Nigeria has in place a sound administrative plan for petroleum tax matters						
a) Nigeria's administrative plan for petroleum tax matters is comprehensive	0	1	0	8	2	11
b) Nigeria's administrative plan for petroleum tax matters is flexible	0	6	2	3	0	11
c) Nigeria's administrative plan for petroleum tax matters is cost effective	0	3	3	3	2	11
Total	0 0%	10 30%	5 15%	14 43%	4 12%	33 100%
H1₄: The implementation processes for Nigeria's petroleum tax system are effective						

a) Government support for effective administration:						
• Recruitment of required staff	2	4	1	4	0	11
• Financial support	1	6	0	4	0	11
• Training and development of staff	2	5	3	1	0	11
• Improvement of staff welfare	0	5	4	2	0	11
b) Adequacy in the finance of petroleum tax agencies						
• Federal Inland Revenue Services	2	8	1	0	0	11
• Department of Petroleum Resources	0	7	1	3	0	11
• Central Bank of Nigeria	3	7	1	0	0	11
• National Petroleum Managements Services	1	9	0	1	0	11
• Ministry of Petroleum Resources	0	7	0	4	0	11
c) Features of Nigerian petroleum tax agencies:						
• Appropriate number of petroleum professionals	1	1	6	3	0	11
• Good information system	0	5	4	2	0	11
• Information system linked to other agencies' information systems	0	0	5	5	1	11
• Access to national petroleum database	0	0	4	7	0	11
d) Nigeria's petroleum tax administrative agencies:						
• Work as an effective team	0	1	5	5	0	11
• Are effective in detecting non-compliance	0	1	3	6	1	11
• Prosecute companies' for non-compliance	0	0	4	5	2	11
Total	12	66	42	52	4	176
	7%	38%	24%	29%	2%	100%
H1₅: The compliance mechanisms relating to the Nigerian petroleum tax system are adequate						
a) Features designed to assist compliance:						
• A clear statement of purpose of the tax regulation	1	6	4	0	0	11
• Capacity for regular review of the tax regulations	0	5	0	6	0	11
• Capacity for timely review of the tax regulation	0	5	1	4	1	11
• Database for petroleum taxes paid	4	5	1	1	0	11
• Adequate numbers of government petroleum taxation experts	2	4	1	4	0	11
• Tax officials' adequate knowledge of the oil industry	4	3	1	3	0	11
b) Policies for fast payment of petroleum taxes						
• Self-assessment of tax liabilities	0	6	3	2	0	11
• Monthly instalment payments for tax liabilities	1	8	2	0	0	11
• Penalties for late payment	2	6	1	1	1	11
Total	14	48	14	21	2	99
	14%	49%	14%	21%	2%	100%

H1₆: <i>The Nigerian petroleum tax system is reactive to changes in factors that significantly affect tax matters</i>						
a) Capacity to adjust to the following situations:						
• Changes in tax regulations in other countries	1	7	2	0	1	11
• Increase in investors risk of making loss	0	6	4	1	0	11
b) Nigerian petroleum tax system is designed to achieve an:						
• Increase in government take when the profitability of oil companies' increases	2	9	0	0	0	11
• Decrease government take when the profitability of oil companies' decreases	1	6	1	3	0	11
c) Control mechanism in the Nigerian petroleum tax system is likely to detect:						
• Fraudulent practices by tax officials	1	7	1	1	1	11
• Underreporting of production volume by multinational oil companies	2	4	1	1	3	11
d) The Nigerian petroleum tax system is designed to cope with the following conditions:						
• MOCs fear that government might not honour contract terms in the long run	1	5	4	1	0	11
• Public concern that multinational oil companies are receiving too great a share of the oil revenue	1	7	0	2	1	11
e) The Nigerian government reacts appropriately to:						
• Requests for a greater share of oil rent by communities in the oil region	0	4	2	4	1	11
• Requests for compensation by communities in the oil region for damages to their environment	1	5	0	5	0	11
Total	10	60	15	18	7	110
	9%	55%	14%	16%	6%	100%

Higher Institution of Learning

Hypotheses	SA	A	N	D	SD	Total
H1₁: <i>Nigeria's petroleum tax system is a fair representation of the interests of the government and the MOCs.</i>						
a) Equitable distribution of revenue	2	4	1	5	1	13
b) Increase in government share of revenue	2	8	2	0	1	13
c) Influence of tax incentives on MOCs investment decisions:						
• Investment tax credit	2	7	1	2	1	13
• Accelerated depreciation	0	6	4	2	1	13
• Guaranteed profit margin	2	7	3	1	0	13
• Cost offset	1	6	4	0	2	13
d) Distribution of tax revenue among the tiers of government in Nigeria:						
• Federal government	6	3	3	1	0	13
• State government	1	3	1	7	1	13
• Local government	1	2	2	5	3	13
e) Incentives for enhancing the international competitiveness of the Nigerian petroleum tax system:						
• Tax incentive package to investors	5	6	0	1	1	13
• Allocation of part of the oil production to MOCs	1	6	6	0	0	13
• Guaranteed minimum rate of return to MOCs	2	7	4	0	0	13
• Compensation of investors for any increase in risks	1	8	3	1	0	13
Total	26 15%	73 43%	34 20%	25 15%	11 7%	169 100%
H1₂: <i>Nigeria's petroleum tax instruments are suitable for achieving the objectives set for the petroleum tax system</i>						
a) Bonuses and fees	3	5	1	4	0	13
b) Royalty	3	7	2	1	0	13
c) Income tax	2	8	0	3	0	13
d) Participation	3	3	5	1	1	13
e) Production sharing	1	7	1	3	1	13
Total	12 18%	30 46%	9 14%	12 18%	2 4%	65 100%
H1₃: <i>Nigeria has in place a sound administrative plan for petroleum tax matters</i>						
a) Nigeria's administrative plan for petroleum tax matters is comprehensive	2	7	2	1	1	13
b) Nigeria's administrative plan for petroleum tax matters is flexible	3	7	2	0	1	13
c) Nigeria's administrative plan for petroleum tax matters is cost effective	1	7	2	1	2	13
Total	6 15%	21 54%	6 15%	2 5%	4 11%	39 100%
H1₄: <i>The implementation processes for Nigeria's petroleum tax system are effective</i>						
a) Government support for effective administration:						
• Recruitment of required staff	4	7	0	1	1	13

<ul style="list-style-type: none"> Financial support 	2	7	3	1	0	13
<ul style="list-style-type: none"> Training and development of staff 	4	7	1	1	0	13
<ul style="list-style-type: none"> Improvement of staff welfare 	4	6	1	0	2	13
b) Adequacy in the finance of petroleum tax agencies						
<ul style="list-style-type: none"> Federal Inland Revenue Services 	10	3	0	0	0	13
<ul style="list-style-type: none"> Department of Petroleum Resources 	8	4	1	0	0	13
<ul style="list-style-type: none"> Central Bank of Nigeria 	9	4	0	0	0	13
<ul style="list-style-type: none"> National Petroleum Managements Services 	7	4	2	0	0	13
<ul style="list-style-type: none"> Ministry of Petroleum Resources 	8	4	0	1	0	13
c) Features of Nigerian petroleum tax agencies:						
<ul style="list-style-type: none"> Appropriate number of petroleum professionals 	1	7	2	3	0	13
<ul style="list-style-type: none"> Good information system 	0	8	2	3	0	13
<ul style="list-style-type: none"> Information system linked to other agencies' information systems 	2	2	5	3	1	13
<ul style="list-style-type: none"> Access to national petroleum database 	1	6	2	3	1	13
d) Nigeria's petroleum tax administrative agencies:						
<ul style="list-style-type: none"> Work as an effective team 	2	8	1	2	0	13
<ul style="list-style-type: none"> Are effective in detecting non-compliance 	1	6	2	4	0	13
<ul style="list-style-type: none"> Prosecute companies' for non-compliance 	0	6	5	2	0	13
Total	63 30%	89 43%	27 13%	24 12%	5 2%	208 100%
H1₅: The compliance mechanisms relating to the Nigerian petroleum tax system are adequate						
a) Features designed to assist compliance:						
<ul style="list-style-type: none"> A clear statement of purpose of the tax regulation 	2	8	2	1	0	13
<ul style="list-style-type: none"> Capacity for regular review of the tax regulations 	3	6	3	1	0	13
<ul style="list-style-type: none"> Capacity for timely review of the tax regulation 	2	6	2	2	1	13
<ul style="list-style-type: none"> Database for petroleum taxes paid 	4	6	2	1	0	13
<ul style="list-style-type: none"> Adequate numbers of government petroleum taxation experts 	3	6	2	2	0	13
<ul style="list-style-type: none"> Tax officials' adequate knowledge of the oil industry 	5	3	3	2	0	13
b) Policies for fast payment of petroleum taxes						
<ul style="list-style-type: none"> Self-assessment of tax liabilities 	2	6	3	2	0	13
<ul style="list-style-type: none"> Monthly instalment payments for tax liabilities 	2	7	3	1	0	13
<ul style="list-style-type: none"> Penalties for late payment 	2	4	1	6	0	13
Total	25 21%	52 45%	21 18%	18 15%	1 1%	117 100%
H1₆: The Nigerian petroleum tax system is reactive to changes in factors that significantly affect tax matters						
a) Capacity to adjust to the following situations:						
<ul style="list-style-type: none"> Changes in tax regulations 						

in other countries	2	6	2	3	0	13
• Increase in investors risk of making loss	2	4	2	5	0	13
b) Nigerian petroleum tax system is designed to achieve an:						
• Increase in government take when the profitability of oil companies' increases	5	4	3	1	0	13
• Decrease government take when the profitability of oil companies' decreases	2	5	2	1	3	13
c) Control mechanism in the Nigerian petroleum tax system is likely to detect:						
• Fraudulent practices by tax officials	2	5	1	3	2	13
• Underreporting of production volume by multinational oil companies	1	2	4	2	4	13
d) The Nigerian petroleum tax system is designed to cope with the following conditions:						
• MOCs fear that government might not honour contract terms in the long run	1	6	2	4	0	13
• Public concern that multinational oil companies are receiving too great a share of the oil revenue	3	5	0	4	1	13
e) The Nigerian government reacts appropriately to:						
• Requests for a greater share of oil rent by communities in the oil region	3	3	2	5	0	13
• Requests for compensation by communities in the oil region for damages to their environment	2	3	3	5	0	13
Total	23 18%	43 33%	21 16%	33 25%	10 8%	130 100%