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FACTORS INFLUENCING THE DEVELOPMENT AND REFORM OF THE UPSTREAM OIL AND GAS FISCAL SYSTEMS IN THE UK AND NIGERIA – A COMPARATIVE STUDY.

Abstract:

The development and reform of petroleum fiscal systems is governed by many of the principles relevant to taxes on all other types of business. However, there is the additional issue of the capture of economic rent. The study considers how far the principles of good petroleum fiscal system design have been applied to the particular oil and gas industries of the UK and of Nigeria from the 1960s to the present day. The study examines the factors which have influenced the development of each country's system.

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Introduction

The aims of this paper are to examine the petroleum fiscal systems employed by the UK and Nigeria. The initial system adopted by each state will be examined and then the significant reforms to each system will be analysed. Both the initial system adopted and the subsequent reforms will be analysed in terms of how appropriate they were given the economic, social and political factors pertinent in each state.

Rationale for comparing the UK and Nigerian systems

- The relationship between the two countries dates back to the colonial rule of Britain in Nigeria. After independence, Nigeria's legal and economic system of trade and taxation were modelled on the British systems.
- both countries are oil producers with their crude oils having similar specific gravity, thereby attracting same price in the international market. The UK Brent crude has API 38 while Nigeria's Bonny Light API 37. Both are referred to as sweet crude oils because of their low sulphur content.
- Royal Dutch Shell, a UK/Dutch company at one time held oil exploration concession for the whole of Nigeria and has continued to be a dominant influence.
- It might reasonably be expected that the UK, as the national relinquishing colonial power around the time of the discovery of Nigerian oil reserves, might have had considerable economic and political influence and input into the design of the Nigerian fiscal regime. Commonwealth countries often retained the tax systems installed for them by the UK during the Colonial period (e.g. Sierra Leone, Sudan).
- The two countries have very different economic and developmental profiles so that they might be expected to have different petroleum fiscal systems. On the other hand, they are dealing with the same handful of multinational oil companies.
- The social, academic and professional background of each of the authors suggested the choice of the two countries.

Sources of data

As well as drawing on a range of secondary sources the authors carried out detailed face to face semi-structured interviews with three senior officials of the Nigerian National Petroleum Corporation. Two are now retired. These interviewees were chosen for their long experience of the Nigerian oil industry and the seniority of the positions when they held/hold. Interviewee profiles are given at Appendix 1 along with the questionnaire. Although the interview questionnaire was carefully constructed, social and cultural influences made it impossible to conduct the interviews as rigorously as the authors would have wished

resulting in transcripts that are not directly comparable. Data from the transcripts is clearly indicated in the text.

Background & Historical Overview

The UK

Although UK oil and gas production is commonly associated with the North Sea, exploration and production in non-commercial quantities has been undertaken for centuries.

The first significant offshore Petroleum discovery was in 1965 in the West Sole Field while the North Sea Fields development were in the mid-1960s. By the end of 1999, the cumulative production of hydrocarbon oil and gas from UK fields stood at 2,445 million tonnes of oil (roughly equivalent to 17,604 million barrels) and 1410 billion cubic metres (bcm) of gas. By 2000, there were 109 oil fields and 87 gas and condensate fields developed for production off-shore. However, for various reasons, economic and other, of these there are only 28 producing oil fields and 11 producing gas fields. (DTI 2002). Revenues from UK oil and gas peaked in the mid 1980s.

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

Although the UK does not have a national oil company the UK government supervises and controls the UK petroleum industry through the Oil & Gas Directorate of the Department of Industry (DTI).

- UKOOA: United Kingdom Offshore Operators Association
- PILOT: (formerly the Oil and Gas Industry Task Force). This is an association of operators, contractors, suppliers, unions and UK government departments which worlds on issues connected with the continuing exploitation of the UK's North Sea oil and gas

Nigeria

Petroleum oil was first discovered in commercial quantity in Oloibiri, River State in the eastern part of Nigeria in 1958. Since then, Nigeria has been an exporter of oil with Shell as the first oil and gas exploration and producing company in the country.

Shell Petroleum Development Company, an affiliate of Shell International (an Anglo-Dutch international oil company) is responsible for 50% of Nigeria's current production of 2 million barrels per day. Cumulative production to 2000 is estimated at over 20 billion barrels.

Before independence in 1960, Nigeria was a British colony. Shortly after gaining independence Nigeria came under the rule of a series of military dictatorships and has experienced severe political instability. The country returned to democratic rule in 1999.

Over 65% of its total oil and gas production are landward. As the onshore fields reach maturity the

emphasis now is on increasing seaward / offshore
exploration and production. The government, via the wholly owned NNPC (The Nigerian National Petroleum Corporation) holds equity (shareholding between 55%-60%) in the companies which engage in the exploration and production of oil and gas in addition to exercising supervisory roles. The remaining equity is held by subsidiaries of the major international oil companies (IOCs). The entire hydrocarbon resource in the country is vested in the federal government which has been cause of conflict between the producing States and the federal government. The regulatory role is exercised through The Directorate of Petroleum Resources (DPR) which is a division in the Ministry of Petroleum Resources.

The government's equity participation in all Joint Venture (JV) operations in Nigeria is managed through National Petroleum Investment Management Services (NAPIMS).
NAPIMS is a parastatal and a Separate Business Unit (SBU) of NNPC.

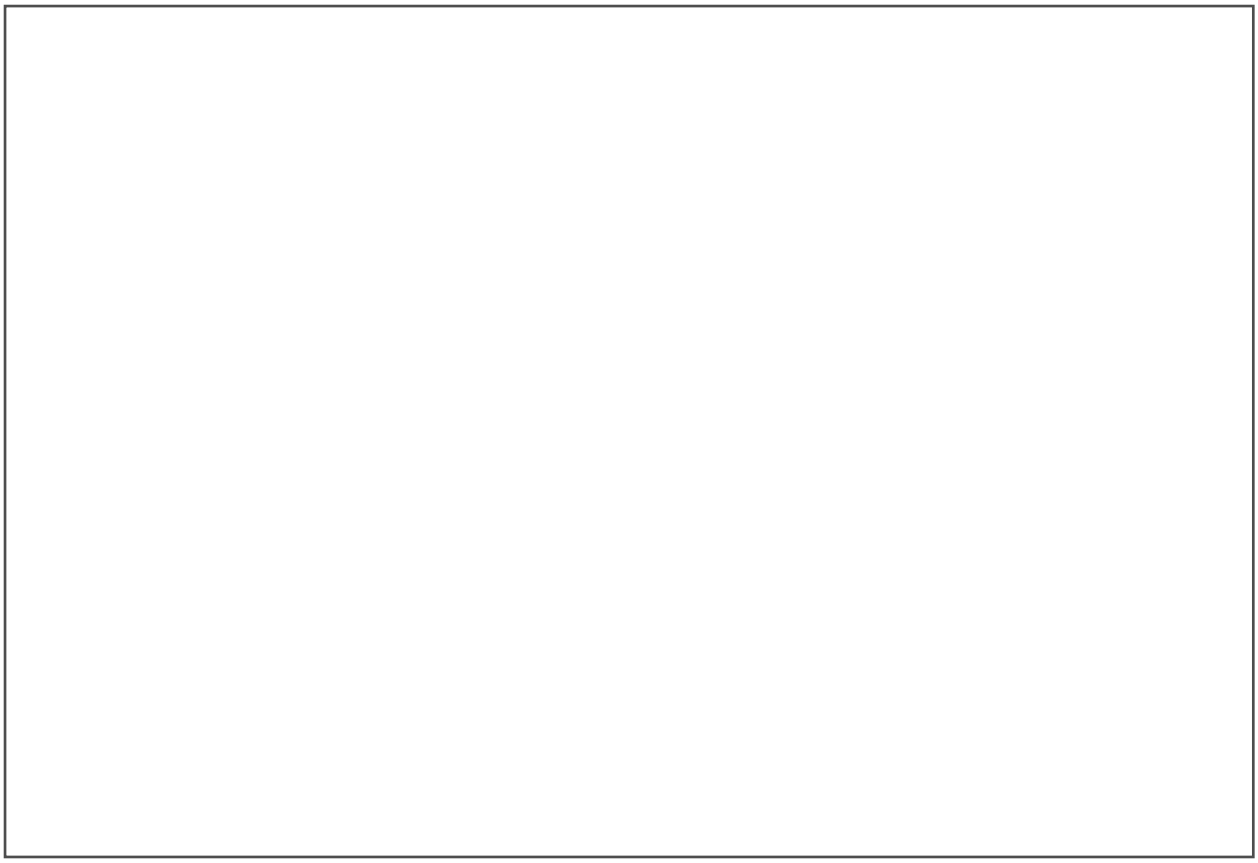
There are many important issues which could be considered when studying the Nigerian oil industry. There is the well documented political tension between the oil producing states and the federal government, resulting from a failure by the federal government to direct sufficient oil revenues to the states. Any researcher with an interest in fiscal federalism ought to be interested in Nigeria. There is the imbalance of over between the IOCs and the government of what is still, after all these years, a developing country. There is the classic "paradox of plenty" characterised by a failure to achieve economic development despite, or perhaps because of abundance of natural resource wealth and underdeveloped economy. There is the undoubted fact that successive military and possibly civilian governments have been corrupt and illegally diverted large tranches of oil revenues. Not least, there has been the regular scenario of civil war with each administration lasting only a few years before being overthrown. (Teacherweb 2002) This paper acknowledges all these issues but will focus on the petroleum fiscal system itself.

The level of sophistication of the relevant government agencies and the tax authority is crucial in the selection of an appropriate petroleum fiscal system. For example, the system adopted by the UK as discussed below, is a royalty/tax system operated on a field by field basis. This requires a high level of expertise on the part of the state to implement and enforce it. A developing country may find its government officials are no match for the highly trained personnel of the IOC, whose figures they must audit. Such a country may lack the infrastructure to administer and enforce a royalty/tax system.

Importance of Petroleum Revenue to UK and Nigeria

Measured by the contribution to national tax revenue and GDP, petroleum revenues are not significant in the resource base of the UK . In contrast, petroleum revenue constitutes the single largest contribution to Nigeria's revenue. The position is summarised in Figure 1

Figure 1: Oil revenues as % of GDP 1995 - 2000

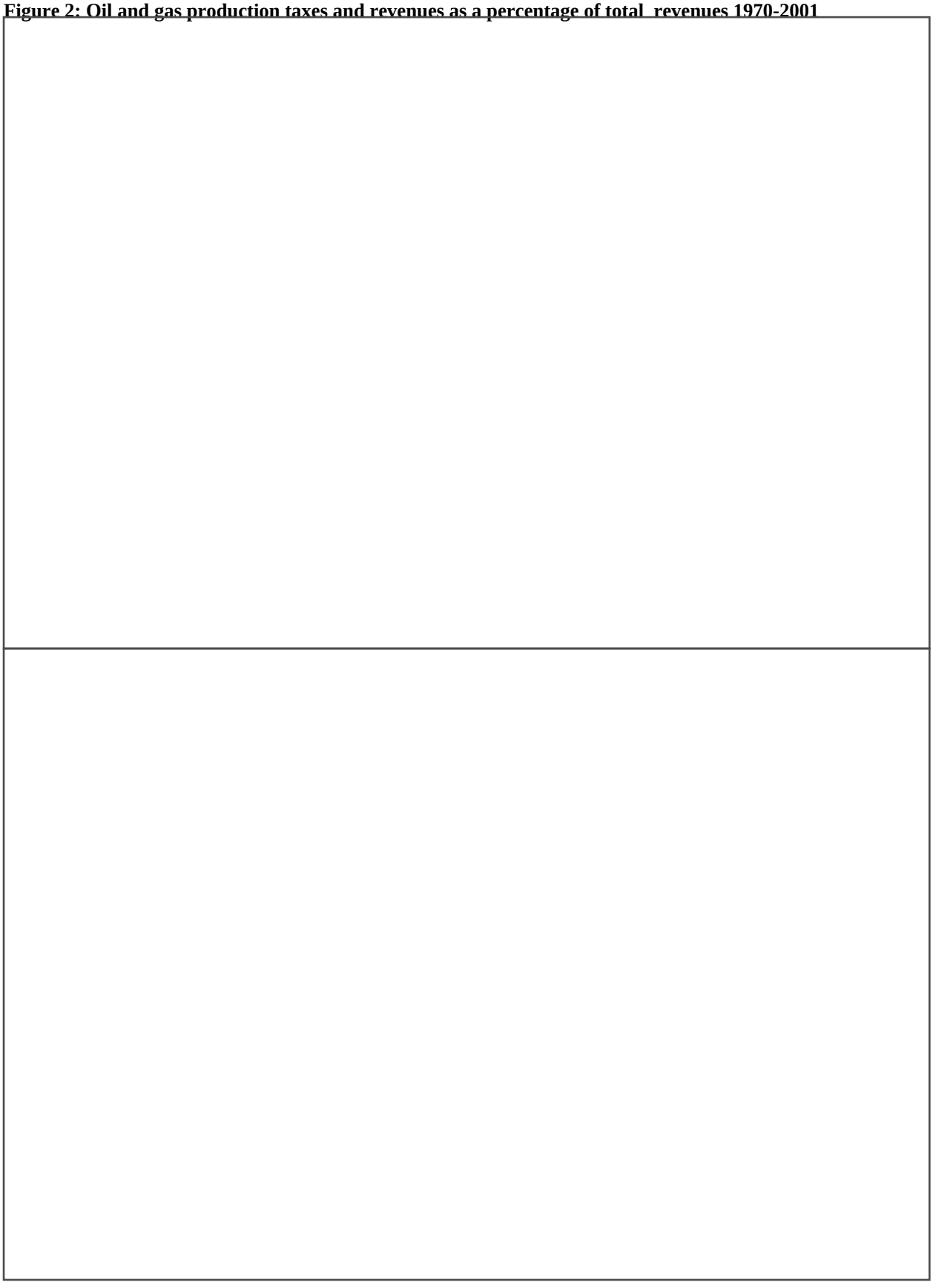


Source: IMF Country Report, Aug. 2001/UK Blue Book

The relative importance of oil and gas revenues

Figure 2 shows the relative importance of oil and gas revenues to total government revenue. The fiscal systems of the two countries differ in that the UK oil and gas revenues consist wholly of taxes, whilst the Nigerian revenues are a mixture of taxes and government share of profits in joint venture companies. The sharp contrast in the level of reliance by the governments on oil revenues is a principal factor in the choice of fiscal system, as discussed later in the paper. It should be noted that at their peak in 1985/86, oil and gas contributed 20% of UK tax revenues.

Figure 2: Oil and gas production taxes and revenues as a percentage of total revenues 1970-2001



Sources: Compiled from various sources of Central Bank of Nigeria, and UK Inland Revenue Annual

Criteria for design of a fiscal system

The classic criteria against which any tax system might be judged were laid down by Adam Smith[?] in 1666. These basic criteria have been added to and refined over the years Although Smith cannot have had oil taxation in mind his criteria may be applied to systems of petroleum taxation:

- Equity :The government should take what the taxpayer can afford to pay. Thus the system should allow for proper recovery of costs by the IOC and a reasonable profit margin (whatever that may be). [?]

- Efficiency: The tax system should not distort the decisions of producers or consumers. Thus the petroleum fiscal system should not be the overriding factor in decisions as to whether to exploit marginal reserves. Otherwise the government receives no tax revenue from marginal reserves which lie unexploited and the IOC derives no economic benefit from them either. This is the well-known phenomenon of “deadweight loss”.

- Convenient: This criteria is not particularly relevant given the improvement in communications and in facilities and technology for transferring money since Smith’s time. However, there is a case for considering it in connection with the timing of tax payments from oil and gas production.

- Certainty: This is a key criteria in the design of a petroleum fiscal system. The IOC must be able to factor in accurate estimates of the likely tax liabilities in both the short and longer term in order to make the correct commercial decision as to whether or not to exploit particular reserves or to arrive at the amount which it believes is appropriate to bid for the right to exploit certain fields. In the short term, certainty means that the fiscal system must be transparent and must operate in practice as it does in theory. This point has implications for the tax administration. Otherwise the IOC will be unable to accurately predict its likely short term tax liabilities. In the longer term, certainty means that the petroleum fiscal system must be stable. Unexpected and significant changes to a country’s petroleum fiscal regime can render the IOC’s carefully modelled assessment of whether and to what extent to exploit reserves obsolete. Having said this, it must be noted that the same can be said for unexpected changes in the oil price, but most models should readily be able to accommodate a relatively simple change of this type.

- Flexibility: This is commonly considered in addition to Smith’s 4 canons. The petroleum fiscal system should ideally be flexible enough to accommodate the effects of changes in oil prices and other market conditions without the need to resort to amending legislation. Thus the tax rates used might be linked automatically to international oil prices. The disadvantage of this is that the government shares in the pain of a decline in oil prices as well as participating in windfall gains from rises in the oil price.

The criteria specific to oil taxation

A key objective of the petroleum fiscal system is to retain control of resources which generate a substantial part of the gross national product (GNP) and to capture the economic rent from them for the benefit of the country as a whole. Economic rent may be defined as the super—profit to be obtained from oil reserves over and above the costs of exploration and exploitation and a "reasonable" profit margin. The fiscal policies used to capture the economic rent will also be designed to provide incentives for private operators to invest in the exploitation of the natural resources.

The principal requirement for a good petroleum fiscal system is that the government should capture a fair share of economic rent whilst still encouraging the exploitation of reserves.

The capture of economic rent usually includes taxation but may also include a range of other means. Governments may own or part own the exploration and production companies so that economic rent is captured partially via profit share, either directly or via dividend payments. Common forms of taxation include royalties on a per barrel basis, specific profits based taxes and ring fencing of petroleum operations for tax purposes so that losses from non-petroleum operations may not be offset. The payment of economic rent may be in the form of cash or transfer to the government of quantities of oil and gas.

The design of petroleum fiscal systems

According to Johnston (1994) there are 7 fundamental criteria in the design of a petroleum fiscal system:

1. Division of profits – the "contractor take". A simplified definition of this is the percentage of total profits on the venture to which the IOC is entitled after payment of profit share and/or taxation to the government. This varies around the world from 15% to 55% although it is higher in the UK.
2. Royalties
3. Cost recovery limits (to regulate the quantum or type of costs which the IOC may set against profits liable to government profit share/taxes)
4. Access to gross revenues for the IOC – whether as profits, or to soak up their costs. The world average is 81%. Royalty prevents full access to gross revenues. Low access to gross revenues implies a disincentive to IOCs to incur risky exploration expenditure.
5. "Government carry". This is relevant where government enters into joint venture arrangements. In such cases it is common for the IOCs to have to bear the cost and the risk of initial exploration with the government partner only joining in and sharing costs/providing funding once reserves are proven. The "government carry" refers to the cost to the IOC of funding the eventual government share until the government steps in and pays cash calls for future development and possibly reimburses the IOC for its share of development costs to date.
6. Ring fencing of oil revenues to prevent non-oil industry costs being offset against oil revenues. At a micro level, ring fencing may operate to isolate taxable revenues of individual fields against deduction of costs incurred in other fields.
7. Crypto taxes – VAT, employment quotas, import duties etc.

Kemp (1987) comments that petroleum fiscal systems should raise revenues for governments while introducing only tolerable distortions to economic activity. He accepts that any system is bound to introduce a certain level of economic inefficiency. Instances are disincentives to develop discovered fields and to continue to explore for new deposits, premature abandonment and changes to depletion rates in established fields due to the tax system.

Commonly, the tax elements of a petroleum fiscal system will consist of royalty on gross production, a resource rent such as Petroleum Revenue Tax (PRT) and normal corporation tax.

Markers of a poorly designed system:

Johnston (2000) lays down the markers of a poorly designed system:

- Rigid inflexible fixed terms
- No royalty or cost recovery limit
- Licence awarded solely on basis of work program bid
- Strong regressive features – the less profit the IOC makes, the more tax it pays as a percentage of its total profits. A per barrel based royalty can have this effect.

The further downstream the point at which taxes are computed, the more progressive is the fiscal system – tax/government profit share is more closely related to actual profits and it increases as a proportion of total profits as profits rise. Systems where tax or government profit share is closely aligned to oil revenues (turnover) as opposed to profits tend to be regressive.

Johnston (2000) analyses his ideal petroleum fiscal regime in the following terms:

- It should ensure a stable business environment and minimize sovereign risk
- It should discourage undue speculation both by IOCs and domestic players ("signature bonuses" – a one off payment to the government for the right to explore – are a commonly used mechanism in this respect)
- It should provide potential for a fair return to both the state and to companies balancing risk and reward
- It must avoid complexity and limit the administrative burden (on both state and companies)
- It ought to allow enough flexibility to accommodate changes in perceived prospectivity and economic conditions, primarily the world price of oil – this predicates the delegation of powers to bodies other than the formal legislature such as the national oil company or ministry rather than enshrining the entire oil tax code in statute.[?]
- It should promote healthy competition and market efficiency

Note the absence of royalty in Johnston's ideal system. This is disliked as it may cause production to cease prematurely at a date when there are still commercially viable reserves. However, royalties are attractive from a revenue raising point of view as they are not dependent on the computation of profits and can be levied from the inception of production. Thus from the host government's stance they are simple to levy, avoid government exposure to risk of rising costs and have cash flow advantages.

Quantitative points of comparison for petroleum fiscal systems

The primary quantitative comparator is the "government take" which may be defined as the total government percentage gain of oil profits. The achievable take should depend on:

- The stability of the political regime (and thus the perceived risk for operators).
- The stage of development of the economy and central government structures –generally speaking, a developed economy should be capable of devising, implementing and, importantly, enforcing a fiscal system resulting in a high tax take.
- The accessibility of the deposits. This was the major disadvantage faced by the UK as no large scale offshore exploration had taken place before in such a hostile offshore environment.

Commonly used elements of petroleum fiscal systems

Petroleum fiscal systems consist of one or more of the following:

Joint Venture

Under a joint venture (JV) arrangement the government both contributes capital and shares directly in profits. These arrangements do not preclude the levying of royalty and taxes on the joint venture companies. They are often known as “concessionary” JV systems, where the JV company is granted a concession to explore and produce.

Nigeria operates the Joint Venture (OPL/OML) License, given to a corporate entity having more than one shareholder. For every JV in Nigeria, the government through NNPC is a shareholder. The Nigerian JVs are governed by the Joint Operating Agreement (JOA) which the Department of Petroleum Resources (DPR) issues on behalf of the Ministry of Petroleum Resources. About 95% of Nigeria’s current oil production is carried out by such JVs. JVs are not now used by the UK government.

The working of the typical Nigerian JV arrangement is illustrated in Figure 3

Figure 3 – Nigerian JV arrangement fiscal flows

Less:1. Royalty
2. PRT
3. 3. Operating expenses
4. Permitted deductions

Production Sharing Contract

The Production Sharing Contract (PSC) is another type of licence for oil and gas exploration and production used to exploit the hydrocarbon resources in Nigeria and most OPEC countries. Under PSC Licence, the government has equity in the company but shares in the volume of oil or gas won (produced) by the licence holder. The government's share of production volume after deduction of exploration and production cost (estimated in terms of value of production volume) escalates as production volume increases. The principal difference between a JV arrangement and a PSC licence is that oil companies fund the operations 100% under a PSC licence and it is therefore a no-risk option for the government.

Figure 4: Production Sharing Contract Fiscal Flows

A typical arrangement under a PSC is the declining volume scale for sharing the production between the host country (HC) and the IOC, as illustrated in Table 3

Table 3 – typical PSC formula

Production volume (bpd)	HC %	IOC %
1 – 30000	30	70
30001 - 60000	40	60
60001 - 100000	50	50
100001+	60	40

Under the PSC arrangement, the "cost oil" is a key fiscal component. Costs are expressed in terms of barrels of oil which may be retained by the production company as reimbursement of its costs. If the actual costs of the production company are higher, then this element is regressive. This is because the production company is not allowed to deduct all its costs in computing the profit to be subject to taxes, and then used as a basis for computing the share of profits due to the "freeriding" government equity partner. Cost oil limits need careful consideration. If they are set too low they act as a disincentive to exploit reserves. If, on the other hand, there is no limit at all on "cost oil recovery" then this provides a strong fiscal incentive to contractors. This was the basis of Nigeria's first PSC arrangement where strong incentives were needed, but as international confidence in the arrangements grew, subsequent Nigerian PSC arrangements have generally incorporated cost recovery limits. Such limits are valuable to a developing country where there is usually a grave imbalance in the accounting capabilities of the IOC and the government officials monitoring the arrangements.

Royalty/Tax

Under a pure royalty/tax system the state does not take a physical share of the oil and does not contribute to or underwrite the costs of exploration and exploitation. Royalties are due on quantities extracted and tax is due on the profits of the IOC. A system consisting solely of royalty and taxes is known as a concessionary system.

Choosing the appropriate system

Systems can consist of a mix of the elements described above. Ideally, countries should design and adopt fiscal regimes that best suit their purposes at particular points in time according to the prevailing global and/or regional industry conditions which capture economic rent in an efficient manner.

Where there is need to attract international oil companies IOC the systems adopted are usually progressive. Politically stable countries with established and accessible oil reserves may be in a better position to enforce a more regressive petroleum fiscal system. PSCs are attractive at the exploratory stages, especially where government funds are scarce, as the state is not required to fund the risky exploration. However, when reserves are proven, governments may prefer to enter into JV arrangements to secure state ownership of part of the oil reserves.

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f oil revenues are flowing freely then a government may consider it has the necessary funds to enter into JV arrangements. When a country is experiencing an oil boom risks may not be weighed up so stringently nor contracts examined in fine detail in the rush to acquire state ownership of the oil riches. NNPC officials consider this was the case in Nigeria in the early 1970s.

The level of sophistication of the relevant government agencies and the tax authority is crucial in the selection of an appropriate petroleum fiscal system. For example, the system adopted by the UK as discussed below, is a royalty/tax system operated on a field by field basis. This requires a high level of

expertise on the part of the state to implement and enforce it. A developing country may find its government officials are no match for the highly trained personnel of the IOC, whose figures they must audit. Such a country may lack the infrastructure to administer and enforce a royalty/tax system.

The initial system adopted by each state

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Nigeria

At the outset of Nigeria's oil production, there was need for the country to attract the IOCs who had both the technical know-how and the finance required to explore and produce. Nigeria was newly independent in 1960 from the Commonwealth and the economy mainly dependent upon agriculture. In order to attract the IOCs there had to be assurances for the IOCs of security of investment given the possibility of negative effects of political transition to independence. Also, in this context, the country needed to dispel the fear of possibility of nationalisation or expropriation of foreign investments prevalent among newly independent developing economies. In the light of these factors, the Joint Venture (JV) was perceived as best for the country's age and her young petroleum industry. Though the PSC would have ensured higher share of resource rent to the country and would have obviated the cash calls which have blighted Nigeria's international fiscal reputation it was thought the IOCs would simply refuse to invest.
Thus, to help attract the IOCs each JV was based on a Memorandum of Understanding (MOU), whereby there are guaranteed minimum margins for the JV companies operating in the country.

Interviewee comments on the initial system
There was no clear cut policy and what policy there was, was not considered dynamic. Revenue generation was a key factor.
Britiain was instrumental to policy formulation, though given the presence of British IOCs, eg. Shell, their contribution was not totally in Nigeria's best interests
The industry operator, Shell, started as a monopoly, although this was eroded with the influx of the American IOCs.
Prior to joining OPEC in 1971 the IOCs dictated to the government
The theory of resource exhaustion pricing was a key factor. The structure of the Petroleum Petrol Tax is one of the most regressive in the world and the idea is to get as much as possible from the prevailing prices of oil and gas. This is not unusual with most developing countries. This was not the case before independence.

Most Nigerian oil fields are relatively small so that a constant programme of exploration is needed to maintain reserve levels, whether by sinking new well heads or more recently by drilling laterally from existing wellheads. The fiscal system also needed to take into account the different conditions faced by the operating companies depending on whether they are exploiting field in politically stable fields near to refining facilities or fields in (political and geographical) frontier areas. Initially exploration was mainly onshore but the system also needed to be flexible enough to anticipate future offshore operations.

External influences were important. Shell held exploration rights over the whole of Nigeria at the time of Independence and according to NNPC officials, was in a position to dictate contract terms. When Nigeria joined OPEC, it was advised to acquire a substantial equity stake in operating companies, which it duly did (e.g. AGIP and ELF).

The type of joint venture system initially adopted between NNEC (Nigerian National Energy Company, now the NNPC) and the IOCs is illustrated at Table 4. Royalty and tax would be deducted (using a predetermined "posted price" per barrel) with a standard allowance for production costs. The remaining profits would be split between the NNEC and the IOC. (Khan 1994). The pre-1982 system is shown:

Table 4 – typical joint venture agreement

	£barrel
Posted price, say	39.25
Less royalty	7.85
Less cost allowance (standard cost)	1.1
Value on which Petroleum Profits Tax computed	30.30
PPT at 85%	25.76
Harbour dues	0.02
Profits after taxes (split NNEC/IOC)	4.52

Source: Khan (1994)

The system also provided for a guaranteed company profit margin. This system, with some technical changes to the calculation of the starting price (the posted price) was used for nearly all petroleum revenues until 1993 when new concessions started to be granted on the basis of production sharing contracts. However, JV arrangements still account for about 95% of Nigerian state oil revenues..(Mbendi 2002)

The JV arrangements have meant that Nigeria has had to fund much of the exploration and developments costs directly. This has led to frequent problems with a failure to put sufficient money aside to meet these regular cash calls, leading the country to be one of the IMF's major debtors (IMF 2000, IMF 2003).

Interviewee comments on the cash call arrears problem
The regime has reduced cash call arrears from $600m in 1999 to only $100m today (2001). The genesis of cash call arrears is deliberate budget overrun by the operators. The Government has always paid up to the approved budget limit. To forestall budget overrun, the Government now insists on taking a first charge on next year's budget with the overrun. The cash calls are paid by the IOCs from their oil share revenue. This is what the Government is also now trying to adopt, i.e. separate the cash call (seed money) from the oil proceeds. That way, there will no longer be cash call problems.

The Ministry of Petroleum Resources administered royalty. The Ministry of Finance administered exchange control and banking regulations. The Inland Revenue was in charge of the Petroleum Profits Tax. Such fragmentation hampered efforts to implement and successfully administer a coherent petroleum fiscal policy, especially given that Nigeria was dealing with some of the most powerful and sophisticated companies in the world.

The **initial system in the UK**

Unfortunately the UK system meets the first 3 criteria for poorly designed systems. . However the system was thoroughly and competently researched prior to implementation which has ameliorated these shortcomings. Licences are awarded in UK on work program bid and tax rates fixed in statute

In the UK, government adopted the so-called North Sea Model, which basically is a concessionary model, capturing economic rent through royalty and tax, with modifications on the length of years for each concession and the acre-size of each concession. The rejection of the typical features of the prevalent model of Concessionary fiscal system by UK, was due to the view that it gave too long a tenure to the IOCs which then was 55 years on average. The overriding aim was to control the resource rather than revenue generation. Although the UK started out with a rather inadequate system, it quickly recognised this and by the time oil had started to be produced in commercial quantities a properly designed petroleum fiscal system was in place. It is this system which developed from the report of a Parliamentary Public Accounts Committee a described below which we will take as the initial UK system.

Until 1975 the petroleum fiscal system consisted of royalty in addition to normal corporation taxes. However, along with Nigeria, the oil crises of 1972 prompted a review of the petroleum fiscal system. It was believed that the current arrangements were not producing sufficient revenue for the UK government and the third element of the standard petroleum fiscal system, a resource rent in the form of Petroleum Revenue Tax was introduced. Also, the Labour government established the national oil company, British National Oil Corporation (BNOC) 1973 and through it, could compulsorily acquired up to a 51% stake in the licensed operating companies. All these were designed as a way of increasing the national share of resource rent.

BNOC was disbanded in the mid 1970s probably as a result of the realization that on the long run the country loses more of its economic rent through state participation, than it could generate through tax take; as it had to finance its carried interest.

The process by which the major developments of the mid 1970's were achieved is instructive. It was orderly and well documented, drawing widely on national and international expertise and may be contrasted with the more ad hoc development of the Nigerian system. To inform the initial choice of fiscal regime for the oil industry, the UK Government commissioned a report from the Parliamentary Public Accounts Committee entitled "North Sea Oil and Gas" (Feb 1973). This report not only advised as to the appropriate fiscal regime but also provided an in-depth review of the oil industry the administration implications and revenue implications. It is particularly instructive to note the general approach of the Committee as set out in the report:

> *"In examining this subject with its wide ranging implications Your Committee have directed attention mainly to the financial arrangements for securing to the Exchequer and the economy a due share from the exploitation of these national assets and to considering whether the policy objectives of the Government might have been attained with greater benefit or potential benefit to the Exchequer and the economy. "*

It was noted that under the initial (pre PRT) tax system the UK would not obtain nearly the same share of the take of oil operations which other countries operating in the North Sea were obtaining as the only certain revenue at that time was from royalty and licence payments. The Committee also recommended the introduction of the 'ring fence' which effectively ensured that PRT was calculated on a strict field by field basis, disallowing the offset of expenditures not directly connected with a particular field. The 1973 report was the trigger for the introduction of PRT and the short lived existence of BNOC/Britoil, the UK state oil company. The importance of the report is that it provides evidence of the painstaking research which the UK Government undertook in order to ascertain the likely revenues from the North Sea and how best to adapt its fiscal system to ensure that the Government got a fair share of the take.

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- ensure that tax due was paid as early as possible (thus under PRT first payments are made earlier than under corporation tax and there are a number of other rules that tend to accelerate payment of tax) E>G> tax becomes due according to when oil is delivered to the user rather than when payment is received.

- ensure that projects where no economic rent was likely were protected from the tax. (IR)

Comparing the initial systems adopted, the UK was in a position to adopt a purely concessionary (and therefore low risk to the state) regime due to its international status as an established and stable economic power. This was in spite of adverse geographical conditions for exploration and exploitation. .A state which has a well developed tax and governmental infrastructure is well positioned to run a royalty/tax petroleum fiscal system, and the UK with its long industrial history and highly developed and educated Civil Service was as well-placed as any state to deal with assessing the taxable profits of the IOCs.

Nigeria, on the other hand, considered that to attract the necessary level of investment and commitment from the IOCs it would have to adopt the petroleum fiscal system in which the sate bears the greatest degree of commercial risk, the joint venture. Had the oil revenues been used to finance and encourage the non-oil sectors with greater success so that economic growth and development was not entirely dependent upon volatile oil revenues this system could have been successful. However, the history of the Nigerian oil industry shows a continuing inability to meet the cash calls necessary to fund the state share of exploration and exploitation costs with consequent detrimental effects on the progress of exploitation of reserves and relations with the IOCs. It has also contributed to Nigeria's present position as a major debtor to the World Bank, an odd position for a mineral rich country to find itself in. The inability to meet cash calls on time is an ongoing problem as the joint venture arrangements currently still account for over 95% of production and revenues.(Mbendi (2002)

With the benefit of hindsight Nigeria should perhaps have relied less heavily on joint venture arrangements and instigated more PSCs at an earlier date. Alternatively it could have entered into arrangements which gave it the right to buy back into a joint venture agreement once sufficient reserves had been discovered in a particular field, i.e. entered into JV agreements with a much heavier element of "government carry".

Both systems were successful in that they attracted the IOCs to explore and develop the oil and gas reserves (though in Nigeria's case the exploitation of gas has been slow) and this is sufficient evidence that they both met Smith's criteria of equity and efficiency. The remaining criteria for good petroleum fiscal systems can only be considered in the light of subsequent developments in each country, along with an appraisal of the fiscal reforms.

Subsequent history of the oil tax regime in each state

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Tax reform may be driven by political and economic considerations.. The Oxford English Dictionary defines reform as to:

"make better by the removal or abandonment or imperfections, faults or errors" or alternatively to "re-form".

Both definitions apply to the reform of oil tax regimes. These regimes need to be responsive to world changes in the oil industry and markets and to the changes in the oil industry brought about by the finite life cycle of the oil extraction industry. To some extent the need for frequent reform can be obviated by building in flexibility to the initial taxing system, such as providing for rates of tax to be linked in some way

to production levels or to the world price of oil.

The success of tax reforms may be measured by three criteria (Sandford 1993)

- How far the tax reforms meet the objectives the reformers set themselves

  In broad terms, the usual objectives of tax reform are to achieve greater simplicity, transparency, economic efficiency and horizontal equity in the tax system. An additional objective commonly pursued is the promotion of social and economic goals and this objective may often conflict with some or all of the others.

- The sustainability of the reforms

- The extent to which tax reform had desirable or undesirable by-products.

Usually a systemic approach to tax reform is preferred over piecemeal reforms. Thus, changes to specific oil taxes should be considered in conjunction with changes to the general corporation tax. However, this may not be so relevant to Nigeria where the tax base is so heavily skewed towards oil taxation.

Selected reforms in the petroleum fiscal systems

UK changes - general

In the UK the principal factors influencing change in the petroleum fiscal regime have been :

- The desire to ensure that the UK Government is maintaining a fair share of the take in the face of changing world oil markets

- The need to respond to the changing environment faced by the oil extraction industry as depletion of the North Sea follows its natural course, leading to smaller reserves which are more costly to exploit.

(Kemp & Stephens 1996)

The introduction of Supplementary Petroleum Duty (SPD)

SPD was introduced in 1981 at the peak in world oil prices and was abolished in 1983 as oil prices dropped. This was simply a response to changing oil prices. A period of intense instability in the Middle East, starting with the Iranian revolution of 1979, then the first Iran-Iraq war, combined with price decontrol in the US (so that spot prices dominated for the first time) led to an unprecedented rise in world oil prices. The price for North Sea Brent increased from $14.02/bbl in 1978 to $36.83/bbl by 1980. (US Department of Energy 2002). The combined effect of royalty, SPD, PRT and corporation tax pushed up the marginal rate of tax in the two years for which SPD existed to nearly 92%.

An alternative strategy would have been to simply increase the rate of PRT. However, this would have meant a headline rate of 95% in 1981/982. Increasing PRT by 20% would have resulted in marginal tax rates of 97.9%. However, a lesser increase in PRT could have achieved the same marginal rate increase. The system was tidied up somewhat in 1983 with the introduction of Advance PRT which replaced SPD. Rather than being merely deductible from profits liable PRT the APRT could used to settle the PRT liability. (Inland Revenue 2002(1))

The abolition of royalty for fields receiving consent after 31.3.82

This was the first step in recognising that the North Sea fields were reaching maturity. As discussed earlier, royalty is a regressive tax in that the lower the profits, the higher the effective rate. Its abolition marked the start of measures designed to recognise the changing nature of development and to ensure that the UK's petroleum fiscal system did not present disincentives to continued exploration and development. There is currently a commitment by the Treasury to abolish royalty altogether. At present royalty continues to be payable on the pre 1982 fields although it may be waived if it can be shown to be impeding activity (DTI Oil and Gas Directorate 2003) – UK Promote. www.og.dti.gov.uk/Ukpromote/regpractice/oiltax.htm)

The abolition of PRT for fields receiving development approval post 16 March 1993

This was a response to the changing nature of fields being developed and recognised the need to provide incentives to the IOCs to continue to explore and develop the smaller and more difficult fields. The effect of this change was to halve the marginal rate for new fields from 66.5% to 33%

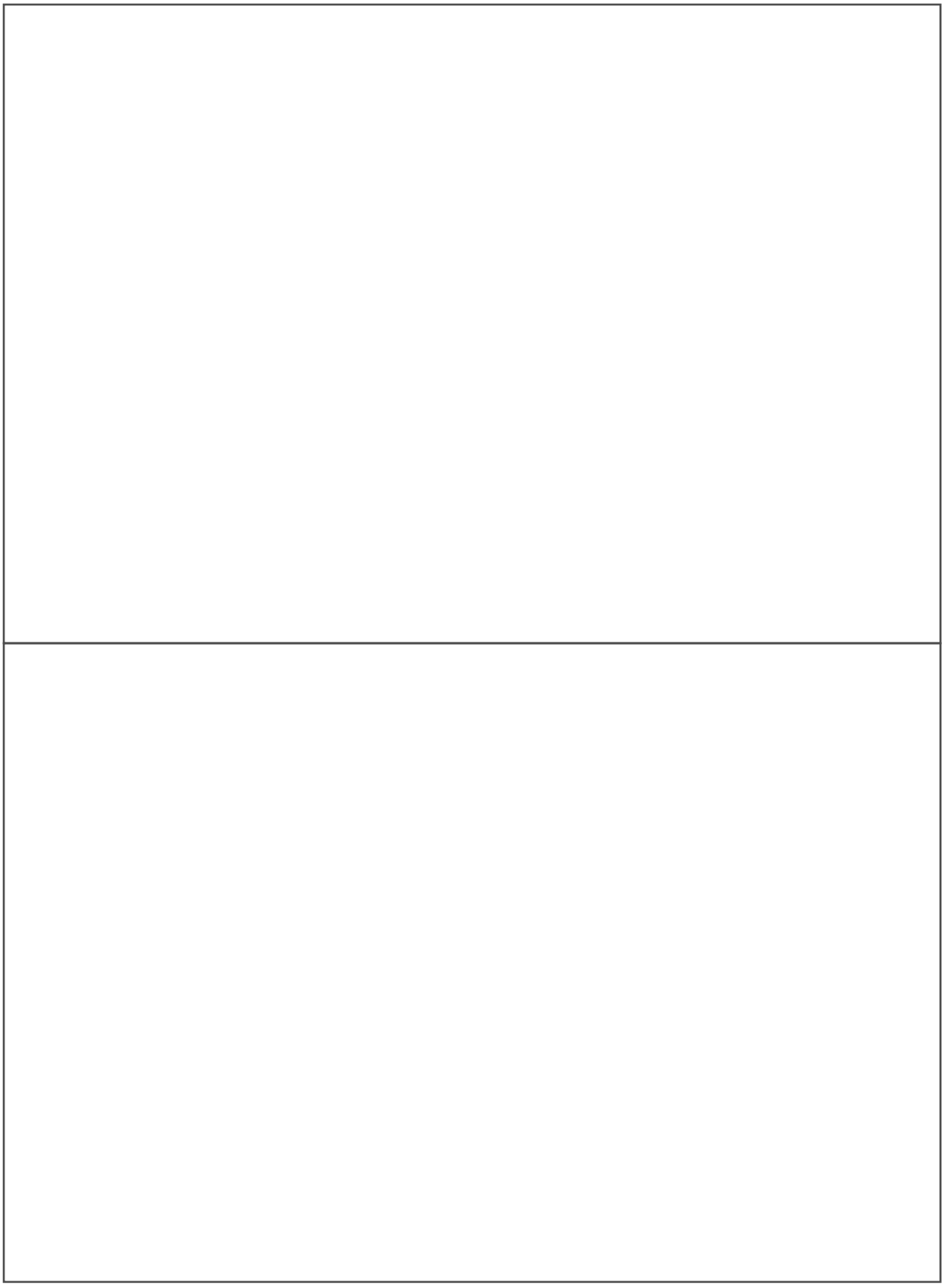
The increase in CT from 30% to 40% in FA 2002

This increase, known as the Ring Fence Charge, limited to the oil industry, apparently took the IOCs by surprise. Nothing in the active consultation taking place between the Inland Revenue and the IOCs in the period leading up to FA 2002 had indicated that there would be such a change. The increase, taken at face value, appears to be in the nature of a windfall tax. The reason for the increase is to increase the UK Government's take in the light of the high world oil prices. In that sense, PRT itself and the increases of PRT from the initial rate of 45% in 1975 through to 75% which were also justified by reference to rising oil prices could also be said to be windfall taxation. However, although oil taxation could be said to be a complete windfall for the government in that it is a tax on an unexpected and large source of profits, the longevity of the tax regime sets it apart from conventional windfall taxes[?]. A better analysis of the 2002 corporation tax rise, limited as it was to the oil industry, is that the UK government, having largely abolished PRT which was the resource rent, has altered the corporation tax regime for the oil industry into a resource rent.

Changes introduced in FA 2002 which give 100% capital allowances and the announcement of the eventual complete abolition of royalty demonstrate recognition by the UK government that new discoveries of large fields are considered unlikely and a relaxation of the fiscal regime is needed to encourage continuing exploration and exploitation in the North Sea. The provisions in introduced in …. for abandonment expenditure demonstrate recognition that the life of some fields is nearly over. Abandonment is a costly and difficult facet of North Sea exploration as there is considerable public opposition to dumping equipment at see (for instance, the adverse publicity suffered by Shell in its attempts to dump the Brent Spar facility on the sea bed).

Figures 5 shows the marginal headline rates of tax plotted against world oil prices. The headline rate of tax is the combined headline rate taking into account the interaction between royalty, PRT, SPD and corporation tax. It does not show the marginal effective rate, which will vary according to capital allowances, cross field allowances, safeguard and other detailed computational issues. It reflects the view that the UK operated a high government take in the early 1980s but that the abolition of PRT for post March 93 fields has reversed this position so that the government take for these fields is relatively low.

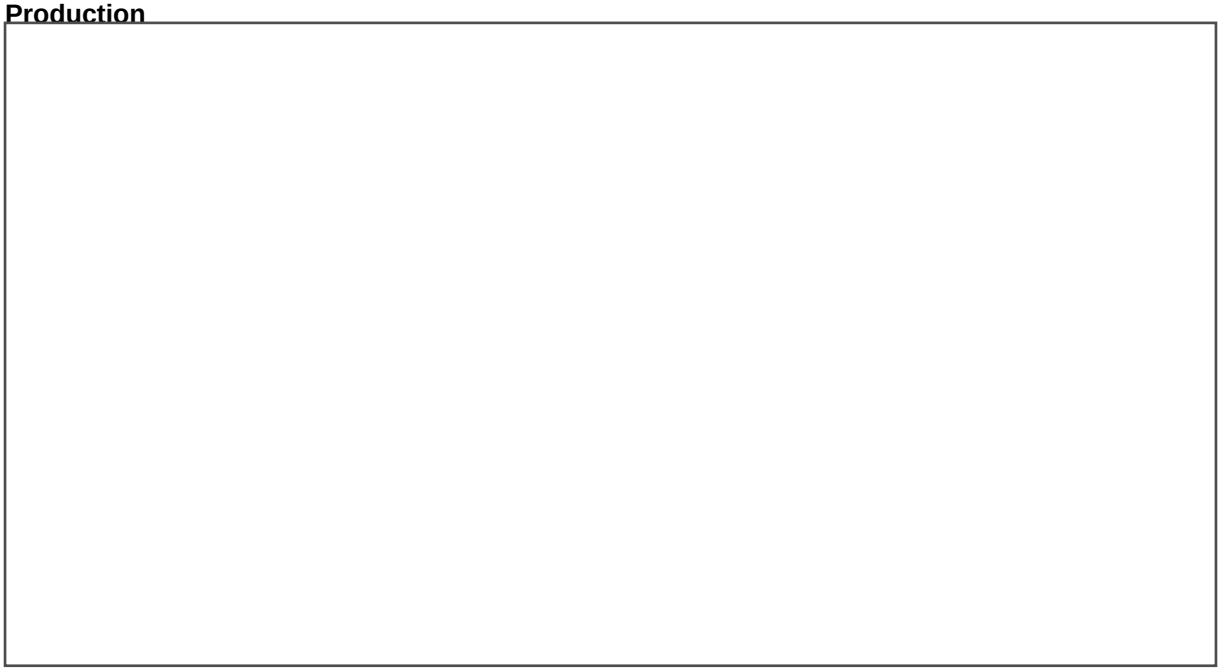
Figure 5 UK headline rates of petroleum taxes and world oil prices



Combining the information in Figure 5 with that in Figure 6 it is possible to make an assessment of the

success of the UK petroleum fiscal system. Figure 6 shows that tax revenues have broadly followed the pattern of oil prices, pointing to a sufficient degree of flexibility in the system. The relatively high government take suggests that the system has been successful in capturing economic rent. The continued upwards trend in oil and gas production suggests that the system has not inhibited the exploitation of oil and gas reserves.

Figure 6: North Sea Tax Revenues and Oil Prices (in constant 2000/01 prices) and Oil Equivalent Production



Source (DTI 2001) Development of UK Oil and Gas Resources 2001 ("the Brown Book")Development of UK Oil and Gas Resources 2001

The IOCs have protested loudly about unexpected tax rises such as the escalation in PRT, the introduction of SPD and more recently the introduction of the Ring Fence Charge (Brower 2002).This raises the question as to whether Smith's criterion of certainty has been adhered to. How much of this protest is genuine is debatable as the tax rises, being statutory, only come into effect after a fairly prolonged period of high oil prices has already elapsed. The IOCs are highly conversant with UK government policy concerning capture of economic rent from UK oil revenues. However exploration and production continues

Regarding flexibility, the system has not been able to react quickly to changes in oil prices due to the decision to vary taxes by statute only. If at least a portion of the profits liable to PRT were calculated by reference to extant oil prices rather than the statutory rate the system would be improved.

The various reforms have certainly not made the system simpler or more transparent. Oil taxation remains one of the relatively unknown regions of tax legislation so that the complexity of the computation of claims for capital expenditure and the various allowances has gone largely unnoticed. The IOCs have the necessary expertise to deal with this. As large and wealthy clients, the accountants and lawyers are happy to provide them with any additional expertise needed to deal with the complexity of the legislation. They

have the funds to pay for the development of sophisticated tax avoidance planning which is an undesirable side effect of the system and the reforms to it, but given the high tax rates involved, probably an unavoidable one.

Nigerian changes

The country's contractual framework has been changed to reflect its perceived position and need. The initial petroleum fiscal system was built around a system of joint venture agreements requiring the government to bear a large proportion of the costs and associated risks of exploration and production.

The alteration of the tax bases from "posted prices" to "offset pricing formula"

As described above, the original Nigerian JVs used "posted prices" as the basis for computing oil revenues on which Petroleum Revenue Tax is based. After the oil boom of the early 1970s there was a need to persuade the IOCs to maintain levels of production in the face of a slump in prices resulting from the oil glut. The Memorandum of Understanding (MOU) was introduced detailing these arrangements and also guaranteeing a minimum margin for producers at certain levels of world oil price. Instead of the posted price, a revised price is substituted which is based on the realisable price of the oil.

Other incentives which are usually contained in MOUs are Guaranteed Notional Margins for realisable prices below $12.50/bbl and a Reserve Addition Bonus, payable on successful discoveries. These effectively reduce the amount of Nigerian PRT payable. (Khan 1994)

Note that the headline rate of Petroleum Revenue Tax has remained at 85%.

Interviewee comments on the guaranteed margins
Why the MOU was signed with a guaranteed margin: It was the time of oil glut and there was a need to stimulate exploration not only on margin but also on reserve addition bonus (an extra payment to the IOCs on successful exploration) for new discoveries and for certain levels of exploration investment capital.

The switch to PSCs

Since 1993 all newly licensed fields have been on Production Sharing Contracts. (PSC).
The first PSC was signed with Ashland in 1973. The terms of this were considered very generous and it was many years before the Nigerian government received any revenues from it.

In order to ensure the inclusion of certain political or economic interests among the successful bidders, governments may choose the concessionary (discretionary), allocative model which Nigeria still operates through its national oil company, the Nigerian National Petroleum Corporation (NNPC).

All the deep water offshore licences have been granted using PSCs. (Nigeria Business Info 2001)

Interviewee comments on the switch to PSCs
Even in a PSC you still have to pay for the cost of the operation though not immediately: you pay later and sometimes with interest. You may not get profit but only royalty and PPT. In the case of Ashland (the initial PSC) the government did not get anything for a very long time.
Even if Ashland's PSC appears generous, it was meant to attract the first PSC to the country, since there are no guarantees of success. Thereafter the new PSCs were not as generous, the

1993 PSCs having signature bonuses.
I think the country should change from JV to PSC. Going by the model in Ecuador, the government retained the right to acquire equity after the operator had discovered oil without any financial commitment in the risky exploration stage. This is a form of PSC that Nigeria should adopt too.
The fiscal policy should be influenced not only by income generation but by other factors like not committing funds to exploration stages in PSC contracts and having the right to buy into the business at a given production level, having a strong taxation and tax supervisory system for revenue generation, value addition, in-country competence transfer, internalization of asset generation base and internal security in order to move the economy forward
I do not agree with the replacement of JVs by PSC because we get between $2 and $2.7/bbl as profit margin from government equity in addition to PPT and royalty. Current JVs should not be replaced by PSCs because those ventures have gone beyond the risky exploration that requires international risk sharing and investment
The country was gullible (in acceding to the terms of the Ashland PSC) and attracted by the idea of non-financial involvement
Would have preferred PSC to JVs all along as we would not have had any financial commitment (referring to cash calls on JVs)
Another problem with PSCs is that you cannot force the producer to sell locally to the refiner. (referring here to the state owned refineries which operate unreliably). The refiner therefore has to build terminals for crude receipts. It is only through the government's share of JV crude that such guarantee of crude supply can be possible. There is a need to commence selling crude to NNPC at international prices which is why fuels price increase are inevitable in Nigeria.

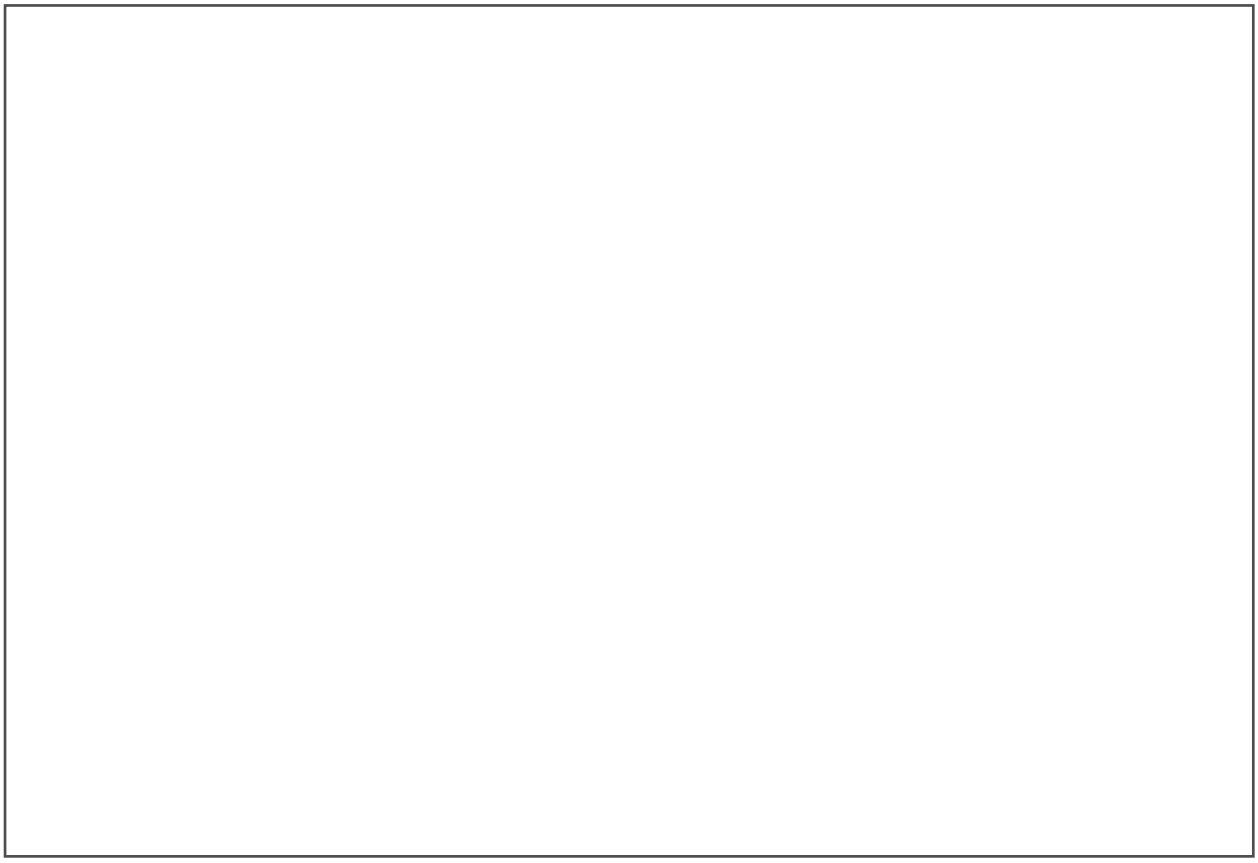
The reduction in royalty rates for deep water exploration

In the 1990s, royalties became chargeable on a sliding scale from a rate of 0-% (for exploration at depths in excess of 1000m) to 16.67% for exploration in waters less than 200m deep. (Nigeria Business info 2001) This is a response to the need to attract IOCs to exploit the more difficult fields.

One reform that has not happened in Nigeria is the disbanding of the state oil company. One interviewee gave as a possible reason for its continuance the fact that it is such a large employer. However, it must also be noted that if the State never owned any oil there would be far less opportunity for illegal diversion of oil revenues.

Figure 7 plots Nigerian oil revenues during the period 1981 – 1999 against world oil prices. Although there is some convergence of movement from the mid 1990s onwards there is little similarity in the pattern prior to that. This suggests that the Nigeria petroleum fiscal system has been less successful at capturing economic rent than the UK system. The graph is only a crude indicator, covering only a limited time period and does not take account of the N/$ exchange rate. One problem with studying Nigerian economic data is the lack of availability, combined with IMF warnings as to its probable unreliability. However it points to a failure by the Nigerian government to secure a proper share of oil revenues until relatively recently.

Figure 7: world oil prices and Nigerian oil revenues



Source: Nigerian oil revenues taken from Central Bank of Nigeria statistical data
Note that this graph measures Nigerian oil revenues in Naira, not US $.

The move away from JVs was prompted by two factors:

1. the fact that the IOCs had built up confidence in the stability of the Nigerian oil industry, despite the ongoing political turmoil and were thus prepared to fund future exploration and development work without corresponding investment by the Nigerian government

2. the need for the Nigerian government to avoid further large scale exploration and development expenditure. It has a history of unmet cash calls, leading to problems with the IMF and to delays in the exploitation of oil and gas reserves.

The reform was therefore primarily driven by political expediency rather than by deliberate development of the fiscal system. Political and economic factors had dictated the choice of the initial JV system and the same factors motivated the change to PSCs.

As with the UK system, the participation of the IOCs signalled that the requirements of equity and efficiency had been met with regard to oil taxation. However, the story of Nigeria's natural gas reserves is rather different (and deserves a separate paper). Most gas has been flared, causing extensive environmental damage as the flares are ,mainly inland as well as being a waste and it is only recently that Nigeria has started to harness the gas reserves. (Nigeria Business Info 2001)

No-one could accuse the political system in Nigeria since Independence of being stable and therefore it

might be expected that the petroleum fiscal system has not met the criterion of certainty. However, successive political regimes have left the system largely unchanged and the IOCs remain committed. This may say more about the power of the IOCs than the threat posed to them by the various military regimes suffered by Nigeria.

The system has shown elements of flexibility in the approach to offshore operations. Royalty is on a graduated scale, with zero royalty for the very deep offshore fields. The individual nature of the PSCs lends itself to a flexible approach. The truth is probably that the system has been very flexible but in an unofficial manner.

Has the petroleum fiscal system captured enough of the economic rent? The answer is probably that the oil revenues raised were so large in relation to the rest of the Nigerian economy that insufficient attention was paid to ensuring that Nigeria got the best possible deal from the IOCs. Would raising even larger revenues have improved the economic situation? Nigeria remains desperately poor. In a country awash with oil and gas 75% of the fuel burned in rural areas and 25% of that in urban areas is wood. Only 34% of the population have access to electricity. The life expectancy is appalling. Nigeria is ranked 152 out of 175 countries in the UN Human Development Index. (UN 2003) (UNIDO 2003). The oil revenues to date total over $250 billion but there is relatively little to show for it. Although beyond the scope of this paper the answer is almost certainly that the IOCs drove a hard bargain and coupled with that the oil revenues have been badly mismanaged

The importance of the fiscal system administration

Some of the principal differences in the establishment and development of the UK and Nigerian petroleum fiscal systems can be attributed to differences in their administrations.

The principal duties of a tax/fiscal administration with reference to oil may be stated as follows:

1. Identification of potential taxpayers
2. Being alert to and dealing with legal tax avoidance
3. Pursuing unpaid tax liabilities
4. Verification of declared production volumes
5. Verification of declared production values
6. Verification of claims for allowable expenditure

(adapted from NAO 2001)

Each class of duties represents an area of risk for the government. The last three require particular oil industry expertise.

Because of the special nature of oil taxation, effective rates of “government take” (taxes and, if applicable, government profit share) are very high compared with other taxes.

Common measures for reducing the scope for tax evasion such as withholding at source and detailed audit by the tax authorities do not readily lend themselves to the oil industry. In the oil industry, payments are often made between the players in quantities of oil and gas rather than cash.

The likelihood of being detected and the likelihood of the imposition of substantial penalties are also key factors

Two key requirements for a tax administration concerned with the oil industry are:

- o the possession of expertise on a par with that of the accountants employed by the IOCs in terms of industry knowledge, tax training and intellectual ability. Without such expertise, the final three responsibilities outlined in the list above cannot be discharged properly.

- o The possession of a high degree of personal and institutional integrity.

Once the initial petroleum fiscal regime has been designed in outline it must be enshrined in law. Although delegating powers to a government agency to set and amend the detail of the system in response to changing internal and external conditions (such as the world price of oil) has its attractions, in practice oil fiscal regimes have been enacted in legislation. Ideally the persons drafting the statutes will include representatives from the tax administration, to advise on the practicality and ease of implementation of the proposed statutes. The danger is that the tax administration will adopt working practices and short cuts to achieve practical implementation of the law which are at odds with the intentions of the policy makers.

To examine the first characteristic, tax administration expertise, the criteria used for admittance to a job the tax administration and the subsequent training which staff receive. However, in practice this is not easy in either of the two countries. The UK employs a relatively small number of staff in the administration of PRT and Royalty (about 60 in total) who are specifically trained for the task.(NAO 2001) Apart from the general information on training of Inland Revenue staff no information as to oil industry training is readily available. No official data on the Nigerian tax administration is available.

To examine the second we will use the data supplied by Transparency International, a well-respected group of analysts based in Denmark who have for some years now been compiling information and statistics aimed at providing information on the likely degree of corruption in the various countries of the world.

Nigerian government administration

"*The Nigerian representatives and the staff agreed that a comprehensive civil service reform program will have to be urgently developed with the support of the World Bank and other bilateral donors. Public employment in Nigeria grew rapidly between 1988 and 1998, a period during which ministries and agencies became virtually autonomous. Over the last four years, the reconstituted Office of the Head of Civil Service has made attempts to control employment; however, these have not been successful because of the absence of key wage and employment data, and of sufficient controls in ministries. A comprehensive review of the size and functions of departments within the civil service was initiated in September 2002, and the aim is to complete the review by December 2003. The staff noted that an audit and pay verification exercise conducted in 2001 was now out of date because of the lack of control on recruitment in the public sector and the sizable slippage in the wage bill" IMF Country Report No 03/3, January 2003 (IMF 2003)*

Estimates of numbers employed in the Nigerian civil service suggest total numbers are around 250,000 although up to a further 800,000 may be employed in the military and parastatals (IMF2003)

It is also appropriate to consider the education and training of officials in NNPC, this being an important mechanism in the collection of state oil revenues. Whilst the IOCs have gone some way towards educating the indigenous population, setting up university professorships and awarding scholarships, this appears to be on a small scale. The political and economic situation in Nigeria has resulted in a brain drain and approximately 100,000 professionally educated Nigerians are believed to be living the US, as well as many more in other countries. Whilst the IOCs themselves employ mainly Nigerians the proportion of expatriates in managerial and professional positions far exceeds that in clerical and menial positions.

Nigeria produces about 55000 graduates a year, but it has been noted that there is a mismatch between what the educational system provides and what industry needs. Science graduates account for less than a

quarter of the total. Nationally, the adult literacy rate is 63%, less than that of most developing countries.(ECA 2002)

The interviewees' comments display an awareness of the inadequacy of the Nigerian state to administer its petroleum revenue system. Three is no level playing field between the Nigerian government and the IOCs in terms of education, access to information and industry expertise. This, coupled with the well documented corruption in the Nigerian oil industry is a principal factor in the failure of Nigeria to properly exploit and manage its oil wealth.

The effect of bribery and corruption

The 2002 Corruptions Perception Index of 102 countries published by Transparency international places Nigeria next to bottom. The UK is placed 10th .from the top.
In the same organisation's Bribery Perceptions Index which asks respondents to state how common it is for private firms to pay bribes tips to get things done, Nigeria, on a scale of "always" to "never" scored "mostly". Bribes and tips are thought to double the salaries of bureaucrats in Kenya and Namibia. In Nigeria, the reported figures suggest bribes and tips have doubled in the last 20 years despite a reported doubling of civil service salaries in 2000 (IMF 2003) in an attempt to curb corruption. According to Court (Julius Court, UN University 2000 "Bureaucracies and perceptions of corruption: survey evidence form Africa) the lowering of bribes is associated with:

- Higher civil service salaries (in proportion to private sector levels)
- Greater influence of core economic agencies in formulating new policies
- Greater job security for top civil servants when political leadership changes

- Greater opportunity for meaningful career development in the civil service.

The issue of corruption amongst FIRS and NNPC officials is important not just for the implications of the misappropriation of oil revenues and the failure to insist that taxpayers pay the full amount due, but also because it is widely accepted (Ott) that once the tax administration is perceived by the taxpayers as corrupt, the readiness of taxpayers to fulfil their tax obligations in an honest and timely manner reduces. There is also a tendency for the government to lose faith in the tax administration and allow salary levels to fall further, exacerbating the problems.

Interviewee comments on Nigerian officials concerned with oil revenues
On the staffing of the tax administration
It is true that they (the tax authority) are not properly staffed and this makes the IOC to take advantage of them. They do not even take a fraction of what tax accountants get in the IOC. e.g. the total remuneration of the chairman of FIRS is nowhere near that of a middle level tax accountant with the IOC, who has spent 18 years in the industry and earns N600,000 (£3000) per month after tax. His counterpart of similar years of qualification earns about N60,000 (£300) at most. Such a situation allows for corruption and creates a situation of leakages in government revenue.
On whether Nigeria lacks the capacity to supervise the operators in the upstream industry:
Maybe so in the previous ten years. Not any longer are we handicapped to supervise the operators. Most of our staff are trained in the universities both locally and foreign. A lot too has been done by the operators, to train staff through the JV training programmes. Also Shell and NAOC have schools for retraining Nigerian graduate engineers and geo-scientists joining the company.
The FIRS cannot effectively oversee the operators, to the extent that a company like Shell

will refuse to provide it with data and FIRS cannot independently ascertain it nor thoroughly supervise and determine taxable profit of the operators: e.g. this is one of the reasons why the value for money audit by the government has not succeeded. Some examples of unscrupulous cost items are Home office overheads for procurement and two or three companies maintaining different portions of the same pipeline.

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

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

On education

Companies can be forced by legislation to undertake personnel exchange. The Nigerian university system should be reviewed in terms of facilities and curriculum to assist the human capital development for the industry. Local development is the best way to go.

A 2.5% tax on the oil companies' profit (the education tax) has been imposed to assist petroleum development.

There is availability of the right educational background to formulate the right fiscal policy for the country, but not enough.

Nigerian universities are trying their best (in terms of developing the industry) though the industry is not cooperating fully as the IOCs still want to conduct all of their research intheir home countries.

On whether the IOCs have exploited Nigeria's low level of industry knowledge in the past: The CAPEX is properly monitored, as per the World Bank type procedures. For the OPEX it is slightly more difficult to monitor the operators since its more of internal transactions. What is done is to audit the costs afterwards. With additional staffing the problems will be reduced.

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

On the effect of poor training and education on fiscal policy formulation

Nigeria has no national petroleum policy and that is dangerous. There is no policy on exploitation of this non-renewable resource. The non-availability of national petroleum policy as affected Nigeria's fiscal policy formulation. A national petroleum policy would have allowed the proper coordination of the formulation and supervision of the fiscal policies. Though the differences in geological formations and conditions affect (petroleum) policies there would still have been better coordination if we had a national petroleum policy in terms of lease life, exploration period and lease sizes.

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

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

On the possibility of fiscal policy changes to address problems of leakages in oil revenues: Today, the internal controls are very much in place. This kind of money (ie.cash flows capable of illegal diversion) can only come from crude oil sales. Today, every sale is notified to the CBN (Central Bank of Nigeria). Once money is paid into this account, NNPC is allowed to withdraw the associated cash call while the balance is left for the CBN to manage on behalf of the Government.

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

Leakages in oil revenue is not a fiscal policy issue, rather a poor supervisory control problem. Operators delay payments in order to use the government's money. It would be difficult to cheat on payment.

On internal control within NNPC:

Today things have changed compared to previous years. There is more openness than before

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|during the military regimes.                                                                       |
|                                                                                                    |
|With the periodicity of audit exercises and financial reporting currently in place now,            |
|though at the insistence of the world bank, the system has improved.  Similarly there is           |
|compliance with the open system of contract award in the last couple of years.                     |
|                                                                                                    |
|On the administration of PPT:                                                                      |
|                                                                                                    |
|The machinery for PPT administration is poor and inefficient.  The Government must                 |
|deliberately train and equip FIRS (Federal Internal Revenue Service) to carry out its              |
|functions.  There is a need for a structured training programme.                                   |
|                                                                                                    |
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UK tax administration

The UK in contrast has a highly developed tax system with well defined career paths for entrants to the Inland Revenue. An annual report is produced giving details of staff numbers and the achievements of the tax authority in terms of revenue collected and enforcement initiatives. The rank of Inspector of Taxes is only obtainable on passing the Inland Revenue's own highly regarded examinations. Even fully qualified accountants and professional tax specialists must take the Inland Revenue's own examinations to qualify as an Inspector of Taxes. The Oil Taxation Office is a separate division of the Inland Revenue and is responsible for the valuation of UK hydrocarbon products from the North Sea and the determination and assessment of royalties, Petroleum Revenue Tax and Corporation Tax for corporate groups engaged in oil and gas production.

Manuals summarising the law and procedures to be followed by tax officials are published on the Inland Revenue website.

Tax officials in the UK command a reasonable level of respect amongst the public generally and the current starting salary is between £19,100-£20,350 in London and £16,440-£17,690 elsewhere. Four to six years after joining pay currently ranges from £38,740-£50,660 in London and £34,540-£44,500 elsewhere. (Inland Revenue 2003). This compares with a national average wage of around £22000.

The relatively high levels of accountability and standards of financial reporting and corporate governance demanded in the UK makes the possibility that large amounts of oil tax revenues are being evaded unlikely. However, it is certainly both possible and probable that the IOCs are actively engaged in avoidance of UK tax.

The nature of tax avoidance means that it cannot be measured except in retrospect. One indication that tax avoidance measures have been actively pursued by IOCs operating in the North Sea is the introduction of the measures to prevent IOCs benefiting from sale and lease back of North Sea assets. [?]

There are approximately 40 staff directly engaged in the administration of PRT. The NAO report addresses the risk areas referred to earlier. In particular the need to rotate staff to prevent over-familiarisation is identified even though this may result in some loss of continuity.

There is no evidence of such audit or review of the Nigerian fiscal authorities.

In the case of Nigeria, the oil revenues started to flow at a point where the country had only recently attained independence from the UK and had little experience of running an ordinary tax administration, let alone the standard of tax administration needed to deal with the extraction of a fair share of economic rent for the country from the highly sophisticated and well-staffed IOCs. The temptations of filtering off large tranches of state oil revenues placed insupportable pressures on the initial civilian government.

Subsequent governments, which are known to have been highly corrupt had no interest in publishing transparent data on flows of oil revenues and thus failed to demand standards of accountability further down the tax administration. This is illustrated by the legacy of the various military regimes: the continued absence of statistics on federal government spending and the continuing criticism by the UN of the reliability of Nigerian governmental statistics.(IMF 2003)

The UK has a well developed, highly educated oil tax administration. This is closely monitored and subjected to regular audit. Yet even the UK tax authority is not certain that it is collecting all the oil revenues that are properly due. The PRT and corporation tax computations allow for significant deductions in terms of capital expenditure. The system requires many complicated computations. For the majority of these, the IOCs use their general ledger figures rather than figures from their audited accounts. The Oil Taxation Office admits there is up to a ten year backlog in some cases of verification of reconciliations of expenditure claims to statutory accounts. It is widely acknowledged that the UK procedures are inferior to those of Norway, which requires statutory independent audit of many figures which do not appear in the statutory accounts but are nevertheless used to compute the oil and gas tax liabilities. The weight of tax cases concerning avoidance schemes, particularly with regard to PRT, indicates that tax planning involving the devising of legal tax avoidance schemes is a high priority for the IOCs.
This is hardly surprising, given the very high potential return on such schemes caused by the high combined rates of oil taxation.

If a country such as the UK openly admits to these shortcomings, what chance does a country such as Nigeria stand? Nigeria appears to exhibit the classic symptoms of a failing tax administration, which has to deal for most of its tax revenue with a handful of some of the most sophisticated multinational companies in the world. Even without the political instability which it has suffered since Independence and without the problems of corruption which have dogged most of its short lived administrations it would have had its work cut out. Perhaps a more constructive approach for the IMF and the World Bank would be to actively encourage and enable Nigeria to expand its professional class by improving education and providing an employment package for FIRS and NNPC officials on a par with that received by their IOC peers.

Conclusions

This study has highlighted the importance of political and economic factors in the development of petroleum fiscal systems. By comparing the development of the system in an undeniably unstable developing country with that of an established and stable country we can observe similarities in the development of the systems which are directly related to the state of maturity and to the geological nature of the oil and gas reserves. Both countries have reacted to the need to offer continuing incentives to the IOCs to exploit the less easily accessible reserves: in the case of Nigeria, the deep offshore fields, in the case of the UK the smaller fields.

A crucial factor has been the bargaining position of the two countries and the IOCs. It is clear that Nigeria has suffered from a weak initial bargaining position which led to the adoption of the JV system with its attendant pitfalls such as the need for massive state investment in the exploration and production processes. The influence of the UK on Nigeria's decision to adopt the JV is presently unclear and needs more research. It is reasonable to suppose that the UK had a hand in encouraging Nigeria to adopt the JV approach, given the very close relationship of the two countries and the initial enthusiasm for a state oil company in the UK. In contrast, the UK was in a strong bargaining position: although much was made at the time of the inaccessibility and inhospitability of the operating conditions on the North Sea fields by the IOCs this was offset by the knowledge on the part of the IOCs that they would be dealing with a sophisticated government and a stable political regime. Hence the UK was able to benefit from its oil and gas reserves without the huge risks of shouldering part of the burden of exploration and production costs, relying instead on a royalty and tax system.

In each country, the petroleum fiscal system has altered according to the maturing of the oil and gas

reserves and according to shifts in the balance of power between the governments and the IOCs. Although the casual observer might expect the Nigerian system to have developed somewhat haphazardly, given the constant political upheavals and the continuing difficulties with corruption and mismanagement of the oil revenues, this system has developed in much the same way as the UK system. The main difference has been the much longer time lags in the Nigerian system. The move to PSCs could probably have bee made much earlier and the incentives to the IOCs to exploit the gas reserves were certainly given far too late.

Both countries have displayed opacity in the stewardship of the oil revenues. The UK position has always been that oil revenues are not hypothecated and it is therefore impossible to say what they have been spent on. In the Nigerian case, the issue of stewardship of the oil revenues and management of the petroleum fiscal system has always taken a back seat to the political struggle as to the control of the federal government and its revenues and to the ongoing tension between the federal and state governments for the right to the oil revenues.

However, the failure of the Nigerian oil wealth to generate economic development and prosperity for all its citizens is widely documented and cannot be laid entirely at the door of an inadequate tax administration. The opacity with which the state oil company has conducted its operations combined with its lack of accountability has provided successive leading government officials to misappropriate oil revenues through private sales of state oil.

The UK was fortunate to have a stable government and well developed tax system, with an established and well-respected tax administration at the time that oil revenues arose. Although its tax system is far from perfect it has not had to face the problems which have beset Nigeria.

The intention to reduce, the incidence of excessive profit by the operators, which necessitated the taxation of revenue rather than profit through PRT.
The need to minimise the negative impact of PRT though the introduction of various incentives, particularly to ensure a particular rate of return on investment to the operators.
The need to continuously make the North Sea attractive by scrapping royalty from 2002.

In the case of Nigeria, the formulation of her fiscal policy has been largely influenced by;
the need for external funding with which to exploit her hydrocarbon reserves
the necessity of convincing foreign investors of the security of their investments, which the state share of equity participation ensured.
State participation equally served the purposes of national ego, in believing that the country has economic participation which could reduce cheating by the IOCs; and security of the state in not entirely dependent on the IOCs were they to have exclusivity in shareholding.

The state participation and it continuity in the existing Joint Ventures also serves to provide nationals the required Know-how in petroleum business management and technology.
The continued retention of the national oil company serves some of the purposes above as well as providing avenues for employment as government continues to be the largest employers.
The adoption of PSC was predicated on the dictates of increased availability of proved reserves, which attracted increase in OPEC production quota. Also, the realization that existing operator's investments have been protected over the years despite prolonged military rule, in addition to lower production than the UKCS for example, and the general desire of IOCs to always diversify their investment base, all assisted the significant change in Nigeria's fiscal policy to the PSC system. The PSC itself is not without adequate incentive given that most of the fields is located in the deep offshore.

Appendix 1

PROFILE OF RESEARCH INTERVIEWEES

1) Name: Mr Olawale A. R Afolabi M.Sc Chem. Eng.
   Experience:
   - Former Group Executive Director NNPC
   - Consultant, Capital Finance Inc., a petroleum finance consulting firm.
   - Director ADDAX Petroleum Development (E&P) Nigeria Co. Ltd.
     A subsidiary of Swiss based international oil company.

For 28 years Mr Oladele worked in both the upstream and down stream sectors of the petroleum industry. He was Planning Manager of NNPC's Petroleum Products Marketing Company (PPMC). Mr Oladele worked (on secondment) with ExxonMobil in the USA (Exploration & Production) Corporate Planning and Asset Management senior management positions.

He was Group General Manager before his promotion to an executive director's position and member of NNPC Board of Directors in charge of Production and Refineries. He retired in 2001. Currently, he sits on the Board of Directors of Addax Petroleum Development Co. (Nig) Ltd., a petroleum company based in Switzerland. He is also a consultant to Capital Finance Ltd., a petroleum finance-consulting firm.

2) Name: Mr Sunday A. Adetunji M.Sc. Mech. Eng.
   Position Held/Experience:
   - Former Group General Manger NNPC-NAPIMS
   - CEO, TETRA Oil & Gas Limited. An oil and gas service company.

He has 32 years post graduate experience as a government technocrat in the oil and gas exploration and production industry. He worked in the Petroleum Division of the Former Ministry of Mines and Power. For five years he was Director of the Department of Petroleum Resources (DPR).

He retired as the Group General Manager of NNPC-NAPIMS, the arm of the government responsible for the management of investment in petroleum exploration and production and supervision of both Joint Venture (JV) and Production Sharing Contract (PSC) operations in Nigeria.

3) Name: Mr O. R Ali M.Sc Petroleum Eng.
   Position Held/Experience:
   - Planning Manager, NNPC-NAPIMS (2001 to date)

A graduate of Imperial College, University of London, UK. Mr Ali has worked with NNPC-NAPIMS for the last 24 years, serving as a member of various committees engaged in the operation and supervisions of oil and gas exploration and production in Nigeria.

DATE	DESCRIPTION OF MEASURES	COMMENT
	Royalty	
	12 ½%	
	Calculated on “wellhead value” – by taking landed sales value less a deduction for Conveyancing and Treating (C&T). the costs incurred in getting the oil from the wellhead to the point of sale.	
	For licences issued after the fourth round (WHEN?) no allowance for C&T	
1975	Introduction of PRT	Recommended by 1973 Public Accounts Committee
	Intended as a cash flow tax	
	Six monthly payment interval	
	Tax base: the individual field, ring fenced. Each field is “determined” i.e. defined in geographic and accounting terms for tax purposes.	
	Charged on:	
	Gross profit from disposals of oil and gas (equity) Tariff receipts (consideration for use of assets/provision of services to other IOCs participating in the same fields) (since 1983) Disposal receipts	
	Reliefs:	
	Exploration costs searching within 5km of field boundary Most expenditure with no distinction between revenue and capital. Thus platforms, pipelines etc may be written off immediately as well as short term storage (up to 10 days production)	
	Payment start date: “payback” – the period in which cumulative income exceeds total cumulative expenditure.	
	“Uplift” – the capital expenditure incurred before payback qualifies for an additional 35% deduction. This is in lieu of interest which is not deductible for PRT purposes.	
	“Safeguard” limits PRT to 80% of excess of profits over 15% of cumulative capital qualifying for uplift.	
	Oil allowance: the first 250,000 tonnes per six month period to a total of 5 million tonnes per field which received development consent before 31.3.82 is tax free. Half this allowance applies to southern fields. For all other fields (which received consent after 31.3.82, not southern fields), the allowance is 500,000 tonnes to a cum total of 10 million tonnes	
	Royalty is deductible in calculating PRT Royalty and PRT deductible in calculating CT	
1976	BNOC disbanded	
1978	PRT raised to 45%	
	Corporate Tax Ring Fence Introduced.	
1979	PRT raised to 60%	
1980	PRT raised to 70%	
1981	Supplementary Petroleum duty – at 20% oil and gas revenues, less allowance equal to value of 0.5 million tonnes per field per 6 month period. SPD a deductible expense for computing	

	PRT.	
1982	PRT raised to 75%	
	Oil Allowances altered.	
	Royalty abolished for fields receiving consent after 31.3.82	
	Gas Levy introduced = 4p per therm on certain PRT exempt deliveries for fields under contracts dating from pre 1975 (there was an exemption from PRT for gas contracts entered into prior to 30.6.75)	
1983	SPD abolished	
	Advance Petroleum Revenue Tax introduced on oil and gas revenues, less allowance of value of 0.5 million tonnes per field in each 6 month period. Rate decreased by 5% per year. Deductible for PRT purposes. If not credited against PRT due to lack of PRT liability then could be refunded.	
	Tariffs brought into charge for PRT. A “tariffs receipts allowance” may be offset against tariff income.	
	Payment interval 6 equal monthly instalments, each equal to one eight of the payment on account for the previous chargeable period. Payments start two months after beginning of the period and the instalments are credited against the payment on account due two months after the end of the period.	
1986	APRD abolished	
1993	Rate of PRT reduced from 75% to 50%	
1998	Gas levy cut to zero	
2001	Capital allowances uplift introduced	
2002	CT supplementary charge 10%	
	Capital allowances for CT purposed increased to 100%.	
	Long life assets rate increased from 6% to 24%	
	Complete abolition of royalty announced but no date set.	

CHRONOLOGY OF MAJOR CHANGES TO NIGERIAN PETROEUM FISCAL REGIME

DATE	CHANGE	COMMENT
1971	First nationalization of oil industry via government participation in joint ventures	First JVs with Elf and Agip/Philips(35% in 1971, a further 20% in 1974 rising to 60% in 1979)
1973	First production sharing contract entered into with Ashland . This was an isolated experiment.	No production from this venture until 1991
1993	New exploration rights granted on basis of PSC rather than joint venture	Terms of a typical Nigerian PSC: Royalty 0% - 16.7% depending on water depth PPT 50% Investment Tax Credit 50% Profits haring : NNPC share 30% - 60% on a sliding scale depending on production levels.

2 Table B11: Public sector current receipts

2 Includes district council rates in Northern Ireland.

3 Includes money paid into the National Lottery Distribution Fund.

4 Includes VAT and 'traditional own resources' contributions to EU budget. Net of tax credits. Cash basis.

5 Excludes Children's Tax Credit, which scores as a tax repayment in the national accounts.

6 North Sea corporation tax (before ACT set-off), petroleum revenue tax and royalties.

[1] Although Smith's definition of equity refers to ability to pay, he also includes a reference to taxation according to the benefits received form the state. This would not seem applicable in the case of oil taxation.
[2] . There is a history of such windfall taxes in the UK, the most recent prior to this being the windfall tax levied on the newly privatised utilities. That tax was structured in a rather more sophisticated manner and sought to tax the newly privatised utility companies on the big rise in the share price of the utility companies in the four years immediately following privatisation. The rise in the share price was taken as a proxy for an amount by which the UK Government could be said to have undercharged for the sale of the companies.

[3] Prior to Finance Act 2001 sales proceeds would be liable to PRT but the lease payments qualify for PRT relief. Companies were using Safeguard to avoid PRT on the sales proceeds but were paying rentals in the post safeguard period. Leasing was being used as a form of finance to circumvent the tax policy issue that interest not deductible under PRT. However, leasing payments include an intrinsic element of interest and so this was being allowed. FA 2001 amended the regime so that lease payments were no longer deductible for PRT purposes.

[i] Adam Smith "The Wealth of Nations" 1666
[ii] . Johnston cites the case of Ecopetro, the NOC of Colombia which could not change the statutory 20% royalty rate and suffered the type of consequences described here. Nigeria has retained royalty in its petroleum fiscal system because this is accrued by statute as revenue earmarked for the producing states.

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Oil & Gas Sales Revenue

1. Royalty (to government)
2. Cost Oil (to producer)

Oil &Gas Revenue

Taxable Profit/Income

1. JV Partners' Profit Share
2. NOC's Profit Share

Based On Share of

Equity Participation

Tax Rate (%)
(PPT/CT)
Other Fiscal Components

Net Profit After Tax

Profit Oil

1. Taxation
2. Other Fiscal components

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