

# **The Role of States in Industrial Development**

**A Comparison of the Oil Industry in Nigeria and Brazil**

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**M.A Thesis Submitted to the Department of Political Science,**

**Central European University.**

**In Partial fulfillment of the requirements for the Degree of MA in**

**Political Science.**

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**Budapest, Hungary.**

**June 2007.**

**Dedication.**

**To God Almighty, for providing this opportunity. Above all, for His mercies  
love and protection.**

## **Abstract**

This research interrogates the capacity of states to foster indigenous development in the contemporary global economy. It does this within the context of contemporary developments in the global oil and gas industry. As the linchpin of the modern capitalist system, oil exploration and production produces enormous challenges to developing countries of the world. These challenges impact on oil and gas exploration and production through the deepening and broadening of international trade, transnational investment, deregulation of domestic markets, and industrial restructuring. By focusing on two regional powers with vast oil and gas resources, this study weaves a connection between the oil and gas industry, the dominant social forces within these states and state capacity. It argues that the differences, variations and divergent trajectories in state capacity between Brazil and Nigeria are socially constructed, and the oil and gas industry provides a context within which these tendencies are played out. The crucial nature of the industry to the global economy necessitates an interaction with oil-rich countries; this study locates the character and nature of these interactions within the context of local and global structures in a specific historical context.

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## INTRODUCTION

In developing countries of the world the capacity of the state to initiate indigenous development has been largely eroded through the combined forces of colonial legacies, Western imperialism and weak institutions. It comparatively examines developments in two countries in the developing regions of the world (Brazil-South America; Nigeria-Africa). Although, the focus of this research centres on the oil and gas industry, this only provides an empirical window into broader conceptual issues related to state capacity, the nature and character of social forces, and local responses to global challenges in both contexts. The choice of the oil and gas industry is not arbitrary; rather its importance can be gleaned from its strategic relevance and its unique profile in both contexts.

This study defines state capacity within the context of six dimensions of governance as stated in the World Bank Governance Indicators. These are: voice and accountability; political stability and absence of violence; government effectiveness; regulatory quality; rule of law; and control of corruption (Kaufmann, Kraay, and Mastruzzi 2006). Contrary to the thesis on the erosion of state capacity in an era of globalization (Ohmae 1995; Drezner 1998), contemporary global events have proved that the state still remains a relevant mediator between global and local interests. These instances indicate not just the involvement of the state in the economy, but more importantly, the quality of its involvement, its ability to shape choices, and build better or worse development paths within the context of global and local networks (O’Riain, 2000; Evans, 1992). In the oil and gas industry, the need to protect local economies and harness the possibilities in the industry for development has propelled resource-rich countries to

adopted different strategies and approaches to guarantee their national economic security (Harris 2001).

### **Structure of the Project:**

The introduction outlines the main argument of the research and provides an overview of the entire structure of the project.

The first chapter deals with an exploration of the linkage theory, the cases: Nigeria and Brazil, and the application of the theory in exploring these cases.

The second chapter examines the state capacity, its origins, development and how it is deployed in both contexts for local economic development. It does this within the context of globalization and the emerging reality in the global oil and gas industry which is characterized by the deepening and broadening of transnational investment and the deregulation of domestic oil and gas industries.

This is followed by the third chapter which examines the administration of the oil and gas industry in both contexts. This will involve an analysis the factors which accounts for the development of domestic labour, local firms, capital and financial mobilization, industrial and technological development.

In the fourth chapter, the concept of linkages will be empirically substantiated by examining the social constructions within which the state operates. It views state capacity as a social construct. This is intended to explain how these forces have shaped the state and accounted for divergent development paths in both countries.

Finally, the project concludes with a summary of the factors that accounts for the differences and variations in state capacity and local economic development in both contexts. This is intended to produce some findings, implications, lessons and outcomes.

## CHAPTER ONE

### Exploration of the Cases, Theories and Application

Nigeria and Brazil provide a similar context for this comparison for a number of reasons. (1) Both countries are still confronted with challenge of reconciling their colonial past with the aspirations of being major regional influences, both politically and economically. (2) They had similar development strategies by adopting the Import Substitution Industrialization (ISI) policies to protect infant and mature industries in the 1960s and 70s. (3) Nigeria and Brazil borrowed largely from International Financial Institutions (IFI) in the past to finance huge industrial projects. (4) The oil boom and shock which occurred in the 1970s played a significant role in the debt crisis in which both countries were immersed in the 1980s and 1990s. (5) Both countries embarked on extensive liberal reforms in the 1980s and 90s, and the oil industry in both contexts went through some remarkable reforms during this period.

These countries also share some socio-political characteristics. First, both countries are the most populous countries in their respective regions (Nigeria – approximately 150m; Brazil – 190m). Secondly, despite their large pool of resources, they have a population that is sharply divided between the rich and the poor. Thirdly, they are both federal states, with similar governmental and administrative structures (Brazil-26 states; Nigeria-36 states). Fourth, while Brazil is multi-racial, Nigeria is multi-ethnic. In addition, both countries had their military past (Brazil: 1964-1985; Nigeria: 1966-1979; 1983-1999) and this period coincided with significant developments in the oil and gas industry in both contexts. Thus, these similarities have also served to reinforce certain developments in the oil and gas industry, and how the state has responded to these challenges in both contexts.



But, more fundamentally, both countries have abundant oil and gas reserves, and a unique energy profile as a hub for regional energy integration projects. As such, they are confronted with the challenges of sustainably exploiting a rich pool of natural resources as they transit from oil to oil and gas (both in actual and potential terms). Presently, Nigeria serves as the hub for the World Bank-approved West African Gas Pipeline (WAGP) project which is aimed at fostering regional political integration and economic growth in the energy sector in the region<sup>1</sup>. According to the *Oil and Gas Journal*, as of January 2007, Nigeria had 36.2 billion barrels of proven oil reserves and plans to expand its proven reserves to 40 billion barrels by 2010. In terms of natural gas, the same source estimates that Nigeria had an estimated 182 trillion cubic feet during the same period. This makes Nigeria the seventh natural gas holder in the world and the largest in Africa<sup>2</sup>. Potentially, it is projected that Nigeria holds at least 70% of the remaining oil and gas reserves to be discovered in the Gulf of Guinea and expects a total of \$60 billion in oil and gas investment across a variety of operations by 2008 (Oil and Gas Journal 2007, 2).

Brazil has one of the fastest growing energy markets in the world and possesses the largest industrial capacity in Latin America. For the Southern Cone of Latin America (comprising Argentina, Bolivia, Chile and Peru), the prospects for economic development and regional energy integration hinges on Brazil. As such, Brazil is at the core of the consolidation of the much discussed “gas hub” or “energy ring” linking the

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<sup>1</sup> The World Bank approved a total of \$125m in guarantees to support the project through two of its agencies: Multilateral Investment Guarantee Agency (MIGA) \$75m; and the International Development Association (IDA) \$50m. [www.worldbank.org/nigeria](http://www.worldbank.org/nigeria). (Accessed 08/05/2007).

<sup>2</sup> Oil and Gas Journal, January 2007. Cited in Energy Information Administration: Country Analysis Brief: Nigeria. [www.eia.doe.gov](http://www.eia.doe.gov) (Accessed 23/04/2007).

countries of the region together (CSIS 2007, 2). As of January 2006, Brazil's proven oil reserves are estimated at about 13 billion barrels and the second largest in South America after Venezuela (OECD/IEA 2006, 1). In terms of its gas reserves different estimates put it at 10.943 trillion cubic feet, 10.806 trillion cubic feet, 10.820 trillion cubic feet, 11.860 trillion cubic feet (see *table 1*). In addition, Brazil also ranks sixth in world proven oil reserves and production outside OPEC. By 2010, Brazil plans to increase daily production capacity to 2.3 million barrels per day by investing at least \$56.4 billion in the industry<sup>3</sup>.

The importance of the energy sector for both countries can be gleaned from two different reasons. Nigeria and Brazil are in the top ten of largest crude oil producer and crude oil consumption respectively. While Nigeria ranks seventh in global crude oil production, Brazil ranks eighth in global consumption (see *table 2 and 3*). Also, oil and gas production and consumption have risen in both countries significantly (see *Figure 1, 2, and 3*). Thus, with specific focus on both countries, the potential size of the industry, the amount of investments, recent deep water discoveries and the amount of oil and gas reserves makes the industry indispensable to both countries. Within this context, this research examines the emerging reality in the global oil and gas industry, and compares the responses of Nigeria and Brazil to these challenges.

### **Statement of the Problem**

The sectoral approach to development in this study takes as its point of departure developments in the global oil and gas industry in two developing countries of the world:

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<sup>3</sup> See the United States Commercial Service: United States of America Department of Commerce; CS Brazil Market Research: The Brazilian Oil and Gas Exploration and Production Sub-Sector, January 2006. At [www.buyusa.gov/brazil](http://www.buyusa.gov/brazil) (Accessed 09/04/2007).

Nigeria (Africa) and Brazil (South America). In comparative terms, it explores the relationship between the local and the global in the oil and gas industry, and how the state in Brazil and Nigeria responds to this. This delves into related developments in these countries and attempts to examine the challenges confronting the Nigerian and Brazilian state in their bid to integrate their domestic capacities into the global oil production process. Thus, this research problematizes state capacity and views it as a product of social constructions in both contexts.

### **Research Question:**

This research addresses an overarching question and this relates to the factors that account for the differences in state capacity between Brazil and Nigeria.

- What roles do social forces play in shaping the capacity of a state to mediate between local and global forces in the global oil and gas industry?

### **Theoretical Framework: The Linkage Theory**

In view of the different developmental patterns and experiences of the Nigerian and Brazilian cases, there is a need to adopt a structured theory which provides a broad basis for explanation. The adoption of the linkage theory in this research is a consequence of how the subject matter is defined. Thus, the concept of linkages adopted here encompasses an enquiry into the relations between critical sectors of the economy, constellation or patterns of social relations and a global dimension. Initially, the linkage theory applied to the understanding of growth and industrial processes in economies with staple industries. But in the course of time it was adopted in the analysis of growth patterns in developing countries which had primary products as their principal engine of

growth. From this point onwards, the linkage theory proliferated and permitted a more detailed analysis of various developing economies.

### **Basic Assumptions of the Theory**

Essentially, it emphasizes a dynamic framework of inter-relationships that is undertaken between social structures and the state on the one hand, and more specifically, the economic factors on the other hand. It stresses that “development depends not so much on finding optimal combinations for given resources and factors of production as on calling forth and enlisting for development purposes resources and abilities that are hidden, scattered or badly utilized” (Hirschman, 1958, 5). Based on the linkage theory, in a particular political, social, and economic context certain characteristics of the dominant sector of the economy imprints itself on society and gives rise to different forms of linkages-backward linkages, forward linkages and inter-sectoral linkages (Hirschman, 1977).

The linkage theory provides the basis for exploring the Nigerian and Brazilian oil industries, and what accounts for the differences in outcome in these contexts. It also provides categories that structure the enquiry and permit a comparative analysis of development paths which the oil industry has imprinted on the economies in which it is embedded. More so, the approach pays particular attention to the differential technological and situational features of economic activities as a means of detecting how “one thing leads to another (or fails to lead) to another” (Hirschman, 1958, 9).

#### **(i) Social Structure and the State**

The interaction between social structures and the state in the linkage theory is very crucial owing to its centrality to the process of development. The theory examines

the institutional forms prevalent in both contexts, and whether it has the capacity to foster development or not. Closely related to this is: (i) The political system and power distribution in both countries which has to do with political representation, granting of minority rights, equal access to political office and resources. (ii) The other issue has to do with revenue derivation and allocation formula. This concerns the allocation and distribution of oil and gas resources in both countries. Since both are federal states with similar administrative and governmental structures, equitable distribution of oil and gas resources based on derivation principle is central to the legitimacy of the state, and by extension, its capacity to foster development.

## **(ii) Economic Factors**

The linkage theory was also formulated as general way of thinking about development strategy in developing economies. But, more importantly, it focuses on the constellation of linkages structured around a product (oil and gas) as being essential in creating development patterns. It provides a basis to understand the variety and depth of linkages in the oil and gas industry in backward, forward and inter-sectoral terms.

- ***Backward Linkages:*** This explores operations in the Brazilian and Nigerian oil and gas industry that rely on domestic/local inputs, in terms of equipments, machinery and personnel in order to stimulate local development. This relates to the amount of jobs created locally and the amount of locally sourced materials that is used in the oil and gas industry.
- ***Forward Linkages:*** This refers to industrial expansion in terms of value added in the oil and gas industry in both countries. This form of linkage occurs only within

the industry (oil and gas) and leads to the diversification of that particular industry. For instance, the existence of a given product:

- ***Inter-Sectoral Linkages:*** This refers to how the operations in the dominant sector of the economy (oil and gas) in both countries can be made to serve as an efficiently performing unit of the entire economy. Hirschman (1992, 68) refers to this as “sowing the petroleum”. This is based on the fact that it necessary to use the oil and gas industry as a “growth pole” to develop other “growth poles” in the economy because the dominant resource (oil and gas) in question is depletable. An inter-sectoral linkage is based on the development of alternative sectors of the economy (for example, manufacturing, agriculture, and mining) that can serve as sources of economic growth once oil dries up.

### **Hypotheses:**

Thus, the linkage theory provides the framework for the following hypotheses:

First, countries with established state capacities (the ability to formulate and implement policies) prior to the discovery of natural resource endowments (oil and gas) tend to manage their resources efficiently.

Secondly, countries with substantial domestic inputs (local human and material resources) in their oil and gas industries tend to foster local development.

Thirdly, the character and nature of social forces in a state shape its patterns of development.

### **Methodology**

The methodology in this study will emphasize the amount of human and material resources (both goods and services) that goes into oil and gas production in both

countries. As such, this research will take different developmental patterns related to oil and gas development in Brazil and Nigeria into cognizance. Empirically, this will involve an analysis of the number of jobs created locally, the amount of local inputs and local resources that goes into the industry in both countries. This also relates to the level of backward, forward and inter-sectoral linkages that have occurred in these economies, the amount of capital invested by foreign firms and how this has led to the growth of industries locally.

Since both countries are recipients of internal aid packages and have implemented the some donour conditionalities, the IMF/World Bank information on the interaction between the energy sector and state institutions, and how these countries became immersed in the debt crisis will be consulted. Secondly, the research will also rely on the World Bank Governance Indicators as a basis for measuring state capacity in both cases. Secondary sources of information on oil and gas reserves will include different scholarly journals: Alexander's' Oil and Gas Report, British Petroleum Statistical Review, Oil and Gas Journal, World Oil, Energy Bulletin, Local Content Development Report among others. Local and international newspapers and magazines dedicated to the oil and gas sectors will also be consulted.

### **Review of Literature: The Linkage Theory**

The central focus of this research explores the role of the state in developing policies in the Brazilian and Nigerian oil and gas industries. As an industry that holds enormous potentials for the global capitalist project, states are often in a dilemma on how to confront the challenges that emanates from mediating between global capital and local development in the oil and gas industry. In order to explore the critical dimensions

relating to the formulation and implementation of policies in both contexts, this review is divided into two broad categories: the theoretical, and the analytical aspects. The theoretical approach explores the concept of linkages and the linkage theory in an attempt to understand its relevance to the central focus of this research. In this context, the idea of linkages provides a framework for exploring the interface and interactions between different aspects of the oil and gas industry in both contexts. The second part of the theoretical approach flows from the first. It examines particular linkages as a product of certain social and political contexts. Thus, the linkage theory compels an examination of the relationship between social structures and the state. This brings to the fore the issue of state capacity. This becomes relevant given the nature of the oil and gas industry in the contemporary global economy. Within the context of the accelerated processes of globalization and the radical restructuring of the global economy, locating the role of the state in the process of local economic development requires a contextual perspective. The analytical approach deals with the organizational structures within the Brazilian and Nigerian “oil and gas complex”, and locates the resource management capacities of both states within the framework.

Overtime the linkage theory has been adopted as an analytical tool in the study of development patterns of different economies in particular historical contexts. Such studies include, the development of transportation in the United States after the Second World War (Fishlow 1965); entrepreneurship and public sector in Brazil (Tendler 1968); fish export in Peru (Roemer 1970); petroleum and the Nigerian economy (Pearson 1970); and the process of industrialization in an enclave economy (Weisskoff and Wolf 1977). With reference to these studies, the linkage theory was advanced as a means of



understanding the process of industrialization in terms of input and output matrix. This made it easy to establish a connection between the input and output model, and to measure backward and forward linkage effects alike (Hirschman 1992).

The pioneering effort in this aspect relates to Hirschman's (1958) response to the "big push" or "balanced" industrialization thesis, that industrialization can only be successful if it is undertaken on a large-scale effort and carefully planned on many fronts simultaneously. For him, this thesis was unhelpful for policy-making in developing countries confronted with strategic issues in development planning. As such, an attempt was made to evolve new ways of thinking about the problem. Following Gerschenkron (1962), Hirschman argued for a backward and forward linkage dynamic in the course of which developing countries would acquire comparative advantage in the import of a given consumer good. The main argument put forward by Hirschman was aimed at understanding the interplay of the various linkage dynamics and fashion out a sequential approach to development which was ignored at that time in developing countries. In the most general formulation, Hirschman (1958 [1988], 5) observes that "development depends not so much on finding optimal combinations for given resources and factors of production as on calling forth and enlisting for development purposes resources and abilities that are hidden, scattered, or badly utilized".

More so, Hirschman (1958; 1992) relied heavily on the linkage theory in explaining backward and forward linkages, linkages and industrialization, consumption linkages, fiscal linkages, and linkages and society. With extension and generalization of the linkage theory along several lines, certain industrial processes which due to their similarities with the backward and forward variety were also included in the theory

(Hirschman 1977). Here, staples provided a case in point. Through a variety of methodological observations, a generalized linkage approach to the staple thesis was embarked upon. Linkage effects, bordering on consumption, fiscal and forward linkages; and inside and outside linkages as drivers of economic growth were also examined.

From the foregoing, the overall pattern of linkages adopted so far reflects an attempt to understand different growth patterns observed in countries with different sectors or primary activity. The differences and variations observed in these economies cannot be explained or understood solely by reference to traditional macro-economic, large scale or general economic factors. The linkage theory, therefore, permits an enquiry into the relations between critical sectors of the economy, and brings a constellation or patterns of linkages into view which the theory attempts to explain. As such, the application of the linkage theory throws light on “how one thing leads to the other” in the process of economic development (Hirschman 1977, 72).

### **State Capacity**

Closely related to the linkage concept is the issue of state capacity. While linkages (backward, forward and inter-sectoral) are directly tied to the technical and economic conditions of production, they are not immune or invariant to social and political changes (Hirschman 1977, 72). This brings to fore the relevance of the social context. As such, the linkage theory compels one to consider the interaction between the social structure and the state, on the one hand, and the economic factors on the other hand. Particularly, in the global oil and gas industry which is characterized by massive infusion of multinational technology, capital and expertise. In this section of the review, the central

argument centers on acknowledging and recognizing the state as an important and relevant context in the contemporary global economy.

Predominant conceptions of state capacity in an era of rapid globalization often attribute less influence to the state as an agent of development. These arguments perceives the accelerated processes of globalization as a phenomenon that cuts across territories, boundaries, and leads to the compression of space and time. As a consequence, it renders obsolete and redundant the traditional concepts of nation-state and sovereignty (Ohmae 1995; Drezner 1998). Since the emergence of the globalization debate in the late 1970s, debates over the nature, extent and significance of globalization has been rampant. The state no longer constitutes a static platform on which social, political and economic relations are constructed. In effect, the role of the state as “power containers” appears to be diminishing, and the inherited model of self-enclosed territoriality, state-defined societies, economies and cultures is becoming highly problematic (Brenner et al 2003). Others have argued that as the nation-state is gradually being “hollowed out”, its central functions continue to exist nominally and its sovereign capacities are increasingly being limited through a complex replacement of state powers and supranational governance institutions. Although, the global capitalist project and its even spatial development compels states at different levels (Duncan and Goodwin 1988), at the same time states have come to be seen as an increasingly important interface between the global and local order (Keil 2003). This view holds strongly that, though, the global economy as characterized by massive transnational flows of capital, labour and dominated by multinational corporations, the state is still not overrun. It contends that individual governments, interest groups and individuals have in many ways have helped

to create or harness global processes and networks to their own advantage (Appadurai and Holston 2003).

From the foregoing, it is critical to understand the state as occupying an indistinct, but important position in the interaction between local and global forces (Kirby 1993). More so, it occupies a key position and plays a key role in the process of globalization as a site for integration and mediation (Lefebvre 1991; 1996). In this context, the state no longer initiates action in the contemporary global economy. Rather, it reacts to global forces and changes in the global economy. Confronted by the power of globalized production, decision-making and international finance, state actors are constrained to concentrate on enhancing national conditions for competing forms of integration (Mittelman 1996). As such, by putting the state at the core of global and local relations, this calls for a fundamental rethinking of state capacity.

As a departure from previous efforts aimed at bringing the state back into the forefront of social inquiry (Evans, Rueschemeyer, and Skocpol 1985), recent efforts must be undertaken under a different context and such efforts requires a fresh analysis in the light of the contemporary global economy. With reference to the Bureaucratic Developmental States (BDS) and the Flexible Developmental States (FDS) models, alternative explanations are provided as to how different forms of local and global processes shape a country's mode of integration into the global economy, and how these processes are nurtured and sustained by particular institutions (Evans 1992; O'Riain 2000). In order to realize the material gain accruable from the process of globalization, the state facilitates this process and acts as a mediator between disparate global and local forces. According to Evans (1995), what matters in this context is not how much state

intervention is necessary for development, but what kind of intervention. This can only be addressed through an analysis of states and state-society relations. For him, different kind of states creates different capacities for state intervention and these structures define the range of roles that states can pursue. Thus, developmental outcomes depend on whether these roles fit the surrounding social context and how well they are executed by political elites.

### **The “Oil and Gas Complex”: Nigeria and Brazil**

Different empirical studies have been done on how developing countries manage their resource abundance and its effects on their developmental prospects (Auty 1993, 1994; Davis 1995; Sachs and Warner 1995; Karl 1997). These studies have addressed issues ranging from weak state capacity, weak institutions, bad governance, among others. As relevant as these observations may be, it is necessary to narrow down to empirical studies on the nature of the Nigerian and Brazilian oil and gas industry, and how this impacts on the management of resources in these contexts.

Some of the earliest studies on the structure and administration of the Nigerian oil industry were done by Shatzl (1958); Pearson (1970); and Lolomari (1976). These studies basically focused on the nature of the Nigerian oil industry during the colonial era, and how the oil concessions in the industry were legislated in favour of British or British allied capital. This had enormous consequences for the pattern of post-colonial oil development, state and multinational relations and administration. It is pertinent to state that the nature and character of petroleum policies which developed in Nigeria had its roots in its prior engagement with colonial capital.

With the attainment of political independence in the 1960s and the emergence of the oil and gas industry as the mainstay of the Nigerian economy, a number of studies emerged and provided the context for more specific issues on the relationship with the industry, economic development and the crisis of state in Nigeria. Some of these studies include, issues relating to the oil question, federalism and state capacity to foster oil-based development in Nigeria (Adeniji 1977; Asiodu 1979). This was further elaborated upon by the works of Naanen (1995) and Ngemutu-Roberts (1994) which delved extensively into the structure of the Nigerian federal state and the nature of power relations between its constituent units, which had detrimental consequences for resource management. Closely related to this are studies by Obi (1998), Ikein and Briggs-Anigboh (1998) on revenue mobilization, derivation and allocation which were undertaken within the context of the crisis of development after several decades of huge oil windfalls that has accrued to the Nigerian economy.

The implementation of the World Bank/IMF-inspired structural adjustment programme in Nigeria had considerable impact on the oil industry. As the dominant sector of the Nigerian economy, it became the target of adjustment policies and went through series of restructuring. Obi (1997) and Suberu (1996) hold the view that these adjustment policies reinforced the crisis of state legitimacy and development in Nigeria. More so, with advent of the accelerated processes of globalization and the extended reach of multinational capital, the logic of internal development was subjected to external priorities and this crystallized into a crisis of its own at another level (Obi 2004; Omoweh 1994; Fadahunsi 1983; Soremekun and Obi 1993). In spite of the impressive array of subjects and areas covered with reference to the Nigerian oil industry, these studies do

not theoretically and empirically deal with issues bordering on the links and inter-face between critical sectors of the oil industry.

Indigenous business and government pressure for some form of indigenization (either of personnel, equity or of local content) is not an entirely new phenomenon in the Nigerian industrial sector. Prior to independence in 1960, local businessmen have been writing papers, making representations to government officials and giving speeches on the subject (Biersteker 1987). But in recent times, local economic development in the oil and gas industry in Nigeria expressed in terms of indigenous economic development policy has emanated from the crisis of development over the years. This study takes as its point of departure developments in the global oil and gas industries and the quest for direct local participation in the industry. In addition, it partly reflects on the Nigerian government's Local Content Development Policy, a bill passed by the Nigerian National Assembly on the 25<sup>th</sup> of December 2005, based on the Petroleum Act of 1969 in Nigeria.

With reference to Brazil, a major work on the question of oil in developing countries in South America has been done by Buesca (1989). Although, the work looks at the entire South American region, Brazil has been given special attention owing to the size of its oil industry among other reasons. The study covers the period from the Great Depression of 1929 (which gave rise to autarchical, nationalistic and interventionist policies in many South American states) until the early 1970s (the time of the oil crisis). It provides the framework for a proper understanding of the origin and evolution of the Brazilian oil industry, and attempts on a selective and comparative basis with other South American countries to examine some of the problems of the oil industry in Brazil as it relates to resource management. Some of these includes: importing and exporting,

acquiring and defending of national interest, crisis of scarcity and over-production, funding, organization and operations, the activities of national oil companies, government policies, commercial priorities and differing regional responses.

Closely related to the above study is the effort to understand the nationalist stance of the Brazilian administration in the formulation of energy policies. Smith (1971), Wirth (1970), Skidmore (1967) and Sieniawski (1970) have undertaken different studies to understand the strong anti-imperialist sentiment which characterizes the Brazilian oil industry and its consequence for foreign capital. These studies provide insights into the nature and character of foreign investment in the Brazilian oil industry, and relations between Petrobras (state-owned company) and other foreign actors in the industry. These relations later developed into a coalition known as the “tripe”. According to Evans (1979), this refers to an alliance of multinational, state and local capital in the oil industry.

Following from this, a number of studies have emerged, among which are Evans (1986; 1981), Sercovich (1980), Barzelay (1986), these studies reflect the development pattern of the Brazilian oil industry and the diversification of the industry to include other development projects, such as, petrochemicals. These studies have provided the broad frame work to understand the oil and gas industry in Brazil. However, in specific terms, other studies have focused on the research and development scheme of Petrobras (Furtado and Freitas 2000). This work examines the thesis that a cooperative research and development scheme provides an opportunity for developing countries to take part in the innovation and access to technology. It takes Petrobras and its quest for new technological innovations as a case in point. In the Energy Policy Journal, Fernandes,



Fonseca and Alonso (2005) examine local content inputs in the oil and gas industry in Brazil and the need to develop goods and services infrastructure in the country to support local contents requirements in the Brazilian energy matrix.

In addition to these, country brief analysis have also examined the organization of the sector, international involvement, fiscal issues, licensing rounds and other issues relating to oil production and exploration in the Brazilian oil and gas industry. Other reports, such as, the Energy Information Administration Report, Brazilian Oil and Gas Market Research Reports, US Commercial Service Report on Brazil and the Local Content Report have the most current update on the Brazilian energy industry. These reports provide empirical observation on the entire activities in the industry, and the quest by the Brazilian government to manage its resources and boost local economic development through the local content policy. As such, they only rely on empirical observations in their analysis of the trends in the industry, without any emphasis on the context and dynamics within which the industry operates.

In conclusion, it is pertinent to state that the linkage theory is very diverse, broad and differentiated. It has become very influential in thinking about development strategies, and analyzing and understanding growth processes. Various linkages and their interaction have taken on a new character and importance; they also appear to constitute a structure that is capable of generating alternative paths towards development or the lack of it. This study adopts a kind of linkage that requires some clarifications. The linkage theory adopted in this study is more inclusive and is geared towards understanding certain development patterns and its consequence for the economies in which they are embedded. With particular reference to the Nigerian and Brazilian oil and gas industry,

the theory of linkages adopted here involves a tripod: the first, involves the social structure and state institutions; the second involves economic factors (backward, forward and inter-sectoral linkages); and the third involves stretching the theory to incorporate the global dimension. The central claim here is that it is not so much about the product or resource in question (oil and gas), but it is the constellation of linkages structured around it that creates development patterns. Thus, various linkages, their possible failures, and their changing constellations make for an increasingly complex pattern of possibilities for a particular economy.

## CHAPTER TWO

### **State and Oil in Comparative Perspective**

The central focus of this research is on the capacity of the state to foster indigenous development in the contemporary global economy. By so doing, it takes developments in Nigeria and Brazil as its point of departure, and explores why both countries differ in developing and harnessing local capacities in their oil and gas industries. Although, developments in oil and gas serve as the crux of this research, it also provides an empirical space for broader theoretical and analytical issues related to oil and gas production and management in both contexts. Insights into such issues cannot be gleaned from a limited frame; it necessarily encompasses relations involving state structures and roles, state and society, and how states contribute to local economic development in the contemporary global economy. This does not mean that the state is the ultimate determinant of all outcomes, excluding other factors, but it follows that these concrete set of interactions link states to other structures in society: political, economic and social, and serve as the underlying basis for state involvement in economic development. As such, by understanding the political and historical context of state emergence, the character of the state, the nature of its institutions and structures, the variations in the Brazilian and Nigerian context is understood.

### **State and Oil: Origin, Context and Development**

Capturing the Nigerian and Brazilian experiences with reference to local economic development requires an understanding of specific national features and variations in the oil and gas industry in both contexts. This provides the context for broader issues relating to resource mobilization, allocation and development

## State and Oil in Nigeria

As a product of British colonial enterprise, the state in Nigeria has been forcefully integrated into the global capitalist structure prior to its independence in 1960. Oil was discovered in commercial quantity in 1956, and export commenced in 1958. But as far back as 1889, 1907, and 1914, the colonial state had legislated the monopoly of oil concessions to “British or British allied capital” (Lolomari 1976, 6). Under the colonial law, Shell was granted an exploration license in 1938 covering the entire mainland of Nigeria, an area of 36,000 square miles (Shatzl 1968). This monopoly remained in place without local participation until 1959 (a year before Nigeria’s independence) when it was reduced to 16,000 square miles (Obi 1997, 140). Within this period, Shell established its control over the most viable oil acreages and reserves, and also consolidated its position over the other “oil majors” who arrived later on the Nigerian oil scene in 1959<sup>4</sup>.

The implications and consequence of this dominance by multinational oil corporations only came into sharp relief with the collapse of the cash-crop economic base of the country in the mid-1960s. Prior to this time, agriculture had served as the dominant sector of the Nigerian economy, accounting for about 40 percent of non-oil GDP, 42 percent of commodity exports and employed about 70 percent of the workforce (Gelb and Bienen 1988, 227). By 1969, the Nigerian military government responding to these changes and to secessionist claims to oil deposits in the Niger Delta promulgated Decree No. 51 of 1969 to legitimize its control over all oil deposits in the country<sup>5</sup>.

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<sup>4</sup> The oil companies include: Mobil, Gulf Oil (now Chevron), Agip, Satrap (now Elf), Tenneco and Amoseas (Texaco/Chevron).

<sup>5</sup> The Decree vested in the Federal Military Government the entire ownership and control of all petroleum in, under or upon any lands in Nigeria; under the territorial waters of Nigeria; or all land forming part of the continental shelf of Nigeria

From 1970 onwards, the administration of the Nigerian oil industry witnessed significant changes and became very crucial as the mainstay of the Nigerian economy. Several changes and reforms were introduced, but in significant terms, government participation in the industry progressed from regulatory and supervisory roles to direct involvement in oil exploration and production. Prior to this time, its initial interest was mainly limited to the collection of taxes, royalties and other dues from multinational oil corporations, and in the making of statutory laws that regulated operations in the industry. With the decline of the cash crop economic base in the mid-1960s and the rise in global oil price in the 1970s, oil exports became the mainstay of the Nigerian economy, accounting for over 80% of national revenue and 95% of foreign exchange earnings during the mid-1970s (Soremekun and Obi, 1993).

The management of oil revenues and resources in Nigeria has always been driven by different interests and its control has served as source of political patronage. The oil boom served to conceal the distortions on which the post-colonial pattern of development was based on. The oil boom of the 1970s occurred under successive military regimes, the political economy of oil in Nigeria became characterized by endemic patronage and widespread corruption by the political elites and their cronies. At the federal, state and local levels, political elites emerged and fostered the interest of select groups in their domain. Since the country was under military rule with a centralized structure, it became fashionable to play the “politics of the centre” and connect directly to the source of wealth and power. Within this context, the military handed over power to a democratically elected government in 1979. From the mid-1981 onwards there was a decline in oil income resulting from the global oil glut which severely contracted

economic activity. The reduced income created a shortfall in foreign reserves needed for imports and increased arrears in trade payments. The economic recession had severe impacts on the Nigerian economy which depended primarily on crude oil. During this period, oil accounted for more than 90% of its export earnings, 83% of government revenue, and had a value equal to 25% of GDP (Kornhauser, 1983). The Shagari administration (1979-1983) was also characterized by massive corruption, embezzlement of public funds and the appreciation of capital flight. The NNPC as a state-owned entity served as a major source of pillage.

The analysis of the impact of state and oil in Nigeria stresses three crucial factors. (1) The specific use to which Nigeria's oil income was subjected to was dictated by the country's distinctive social and political composition. Unlike Brazil, during this period the central government presided over a federation with strong ethnic and regional cleavages and this gave rise to intense rivalry over access to oil. Also, in contrast to Brazil, class and sectoral interest were relatively weak in Nigeria. (2) There was little or no incentive to use oil revenues in reviving other sectors of the economy. Here, the political and institutional differences between Nigeria and Brazil come to the fore, and it manifests itself in different priorities and capabilities in both countries. (3) These in turn resulted into a vicious cycle of distortions, declining efficiency, falling non-oil output, fiscal deficits, inflation, and cuts in public spending (Gelb and Bienen 1988, 228).

### **State and Oil in Brazil**

Oil exploration commenced in the entire Latin American region in the last years of the 19<sup>th</sup> century and the early years of the 20<sup>th</sup> century. Remarkable discoveries were made in Peru (1896), Trinidad (1897), Mexico (1901), Argentina (1907), Bolivia (1908),

and in Venezuela (1909) (Buescu 1989, 28). For Brazil, oil exploration did not commence until a later date. Prospecting and production attempts have been made before the First World War, but substantial discoveries only commenced in the 1930s. The predominant claim was that foreign oil firms did not want to invest in Brazil in order to maintain a low level of supply internationally and to keep the reserves in Brazil for a future date. It is much more probable that the economics of production in Brazil was not good enough to justify investment (Buescu 1989).

Brazil differed from other Latin American countries due to the fact that it was not part of the pioneering group of oil-producing countries. However, for reasons which remain unclear, Brazil differed substantially from Nigeria by embarking on a campaign to establish a “national” oil industry under a different political and economic context (Buescu 1989, 31). This was a remarkable development due to the fact that it constituted an anomaly, and unlike state enterprises Nigeria, the Brazilian oil industry was founded and nationalized in the 1930s before oil was discovered (Smith 1976). Thus, with discovery of oil, the tide of nationalism pervaded the oil industry which was mainly targeted at resisting foreign investment and international monopolies, and the campaign for nationalization became intense and was launched under the different slogans: “It is our Oil”, “The Oil War”, “The Brazilian Oil Scandal”, “Oil Salvation or Damnation for Brazil”, “Oil-Development or Slavery” (Buescu 1989, 31).

These events were remarkable in many respects. It is pertinent to note that Brazil lacked the capital, technology and skilled workforce required for large-scale efficient operation. But, the opposition to foreign oil firms and the desire to create a national oil industry matched the nationalistic mood of the time. More so, this trend was reinforced

by a realization of the importance of oil both to develop an independent economy and to guarantee national security (Wirth 1970). But, most importantly, it set the stage for subsequent relations between foreign oil firms and the Brazilian state. With reference to the ideology that prevailed at the period and the political decision-making mechanisms which reflected these considerations, there was an overwhelming support in Brazil that only government intervention can forestall oil monopolies, mobilize the necessary capital, technology and professional workforce needed in the industry.

Prior to government intervention, private-sector (foreign) attempts had met limited success, but with state intervention in 1931, significant efforts focusing on direct control of exploration were made. Specialist state bodies were set up to achieve this goal, such as, the Mineral Production Board in 1933. The trend continued with the Constitution and Mines Act of 1934, and the 1937 Constitution which guaranteed the right of Brazilians to extract oil (Buescu 1989, 33). Based on a policy of a nationally-run oil industry, Decree 359 in 1938 led to the creation of the National Oil Board as the main organ of government policy. Among other things, it represented a decisive step in furthering government aims not just to have a regulatory role, but also possessing executive powers relating to oil production and refining. By 1941, the state had fully taken control of all oil reserves, and authorization for oil exploration and development activities became the sole prerogative of the National Oil Board (Wirth 1970).

The creation of Petrobras in 1953 offered the military in Brazil a unique role and served as an extra political resource to strengthen its position in the centre of the system. Thus, the military used petroleum as a mobilizing resource in furthering its agenda of oil nationalism (Philip 1992, 182). These moves were also meant to serve other purposes.



This was due to the fact Brazil adopted these nationalist policies at a time when the economy was growing and it served a political aim of self-sufficiency in oil. Although, Brazil was not self-sufficient at this period and still relied on imports, the economy was developing a growing demand for fuel, the Brazilian authorities bridged the gap by concentrating on the construction of refineries which processed imported crude oil (Buescu 1989, 33). This development was peculiar to the Brazilian experience due to the fact that local demand practically served as an impetus for the development of refining capacities to accommodate local consumption. Alternatively, this could not have occurred in Nigeria owing to the fact that it began by selling oil to the global market and there was practically no local demand for refined products. Crude oil production and refining in Brazil constituted one of the earliest forms of local content development in the country. The adopted strategy of concentrating refining capacities while the growth of national production was being implemented was successful in Brazil. More so, the proceeds from refined products gave Petrobras the necessary financial resources it needed to intensify the search and development of new oilfields (Buescu 1989, 33).

**Table 5: The Oil Industry and the Military**

	<b>Military Rule</b>	<b>Incentives</b>	<b>Oil Industry</b>
<b>Brazil</b>	<b>1964-1985</b>	<ul style="list-style-type: none"> <li>* A political struggle within the ruling government coalition led to the advent of the military.</li> <li>* The military wanted a reform of the political and economic system. This provided the incentive to embark on developmentalism and industrialization projects.</li> </ul>	<b>Oil Nationalism</b> <ul style="list-style-type: none"> <li>* The oil industry provided the context for a nationalist and populist stance for development purposes. It also provided a unique role for the military and served as an extra political resource to strengthen its position in the centre of the system</li> </ul>
<b>Nigeria</b>	<b>1966-1979</b>  <b>1983-1999</b>	<ul style="list-style-type: none"> <li>* The military responded to ethnic and regional conflicts which had led to the breakdown of law and order six years after independence.</li> <li>* Military intervention in Nigeria was characterized by officers from a particular ethnic extraction. This led to the perpetuation of a particular class and ethnic agenda.</li> </ul>	<b>Patronage Politics</b> <ul style="list-style-type: none"> <li>* The political economy of oil in Nigeria became characterized by endemic patronage and widespread corruption by the political elites. It provided the context for centralization of resources, primitive, class and ethnic-based accumulation.</li> </ul>

**Boom and Shock: Impact and Responses**

Global developments in the oil industry had divergent impacts and produced different outcomes in Nigeria and Brazil in the 1970s. The OPEC price revolution of 1973 led to the increase in oil prices and ushered in a period of boom for the former, and amounted to a period of shock for the latter. The boom that occurred during this period produced different outcomes in both contexts, and latter initiated the conditions that led to the massive debt crisis witnessed by both countries subsequently.

Owing to the oil boom, between October 1973 and March 1974 Nigeria's oil revenues increased almost five times due to higher prices, greater production, and an increase in its share of the oil revenues through greater public ownership, higher taxes and royalties. According to Gelb and Bienen (1988, 239), by mid-1974 the Nigerian government found itself with much more revenue than it had anticipated. This led to a high budget and balance of payment surplus. Thus, the government in Nigerian found it self awash with petro-dollars that it could use to accomplish its economic, social and political objectives. With the surge in the price of oil, government's expenditure pattern increased, public capital spending accelerated and there was wage increase for the civil service. Nigeria's oil boom lasted till 1977, when there was a decline in the global price of oil due to a "glut" in the global oil market. The oil shock for Nigeria exposed the dependent and mono-cultural nature of the Nigerian economy. The oil boom served to conceal the distortions in the Nigerian economy which was weak and import-dependent, and characterized by years of mismanagement, waste and corruption. With foreign reserves barely able to cover a few months of imports the economy fell into dire straits after oil prices collapsed globally.

This obviously led to a fall in export and government revenues. According to Wright (1998, 110), in 1978 the Nigerian government was earning \$300, 000 less than the previous year. Amidst a balance of payment crisis, the government announced an austerity package which was aimed at reducing government expenditure. By 1978, it raised two “Jumbo loans” loans totaling about \$2 billion from the Euro-Dollar market. This was partly encouraged by some reasons: the need to address the imbalance in the external payments sector; the gradual recovery of the global oil markets; and the position of the economic advisers who felt that Nigeria was still under-borrowed (Obi 2001, 32). Although, a slight improvement occurred with a second and short boom in 1980, the Nigerian authorities still did not address the roots of the crisis in the economy. By the time the second shock occurred in 1981, the Nigerian economy came to a virtual standstill, and this set the stage for its prolonged economic crisis and the adoption of the World Bank/IMF- inspired Structural Adjustment Programme.

For Brazil, the oil boom amounted to a shock. This was because at the time Brazil relied on imports for over 80% of its oil consumption. This development was crucial in many respects for Brazil, because its total import bill rose from \$6.2 billion in 1973 to \$12.6 billion in 1974, and the trade balance changed from a slight surplus in 1973 to a deficit of \$4.7 billion in 1974, while its current account deficit of about \$1.7 billion grew to \$7.1 billion (Baer 1995, 89). In reacting to the oil shock, Brazil had two options: to either reduce growth in order to diminish its non-oil import bill, or opt for continued high growth rates. However, Brazil opted for the second alternative, increased its exports and economic growth rate in order to compensate for the rising price of imported oil (Rabelo and Vasconcelos 2002, 321).

In Brazil the political context under which the OPEC price revolution of 1973 occurred was remarkable. Shortly after the price increase, there was a change of government in Brazil and the incoming administration of President Geisel aimed at pursuing goals that it considered politically imperative. As such, the administration sought to maintain high economic growth rates while seeking to deal with effects of the oil shock. The administration intensified on massive infrastructural investments in highways, telecommunications, hydroelectric dams, mineral extraction, factories and atomic energy. Despite nationalist objections, the administration opened up the oil industry to foreign firms for the first time since the early 1950s (Hudson 1997). The options pursued by the administration implied borrowing from abroad to see Brazil through the oil crisis. Without foreign loans it would not have been possible for Brazil to pay its high oil bill and continue to import the inputs necessary for the production of its industrial goods. These borrowings were mostly done by the public sector: public enterprises, state governments, and various public agencies (Baer 1995, 92). By the time Brazil witnessed the second oil shock in 1979; its debts had increased considerably. This was basically attributed to the fact that there was a rise in global interest rates which increased the cost of new borrowings and the cost of servicing outstanding debts (Baer 1995, 95). As such, by the late 1970s, Brazil was well immersed in the debt crisis which characterized the nature of its economy up till the 1990s.

**Table 6: The Oil Boom: Impact and Reaction**

	<b>1st Boom (1973-77) Impact</b>	<b>Response</b>	<b>2nd Boom (1979-80 ) Impact</b>	<b>Response</b>
<b>Brazil</b>	<ul style="list-style-type: none"> <li>* The Oil Boom amounted to a shock basically because at this time Brazil relied on imports for over 80% of its oil consumption.</li> <li>* High import bill, balance of trade deficit and current account deficit.</li> </ul>	<ul style="list-style-type: none"> <li>* Opted for high growth rates, increased exports and economic growth in order to compensate for the rising price of imported oil.</li> <li>* Relied on foreign loans to pay for its high oil bill and for inputs necessary for the production of its industrial goods.</li> </ul>	<ul style="list-style-type: none"> <li>* The second shock intensified the crisis in the economy and resulted into more borrowing.</li> </ul>	<ul style="list-style-type: none"> <li>* New borrowings were done within the context of the rise in global interest rates, increase in the cost of new borrowings and of servicing outstanding debts.</li> </ul>
<b>Nigeria</b>	<ul style="list-style-type: none"> <li>* Five-fold increase in oil prices. Budget surplus and balance of payment surplus.</li> <li>* The “glut” in the global oil market in 1977 led to a shortfall in government expenses.</li> </ul>	<ul style="list-style-type: none"> <li>* Increase in government expenditure, public capital spending and wage increase for the civil service.</li> <li>* In 1978, the government raised its first loan (\$2b) from the Euro-Dollar market.</li> </ul>	<ul style="list-style-type: none"> <li>* The second boom was short and did not address the roots of the crisis in the economy.</li> <li>* The second shock occurred in 1981 and intensified the problem in the Nigerian economy.</li> </ul>	<ul style="list-style-type: none"> <li>* This led to a long drawn recession in Nigeria and more borrowing from private international financial institutions with high interest rates.</li> <li>* This finally led to the adoption of the World Bank/IMF adjustment package in 1986.</li> </ul>

### State, Foreign Capital and Patterns of Relations

Owing to the nature of oil and gas industry globally, the development of this resource requires the involvement of international capital, specialized skills and technology. This form of investment is made available through foreign firms. The interaction between these firms and the state also holds obvious implications for different developing countries. As such, the context of their operation in Brazil and Nigeria brings into sharp relief the capacity of the state to engender local development.

In Brazil, the dominant role played by one actor (the state) forged different tendencies together. There was the presence of international capital, the dominant role of

the state in the process of industrialization and the power and autonomy of state enterprises. As Evans (1979, 214) notes, these are roles that appear contradictory, but the manner with which the Brazilian state forged this role together to insert itself into the process of industrialization was remarkable. He argues that the state played a central role in the transition from classic dependence to dependent development, and by the time Brazil struck oil the foundations of state capacity and entrepreneurship had been well laid. However, the Nigerian experience presents a different picture and this explains the problematic relations between foreign capital and the Nigerian state. Foreign capital has played a critical role in the Nigerian economy since the colonial days. After independence, this relation was reflected and reinforced by the external dependence of the Nigerian economy. This external dependence implied a limited autonomy of the Nigerian state and impacted the development of productive forces in every facet of the Nigerian economy (Ake 1985).

Of relevance in this context was the role of the military in both cases. In Brazil, the need to create an enabling environment for state enterprises was at the core of the military's strategy of increasing political and economic centralization. Based on a survey carried out by Visao (1975, 51), under the military in Brazil the number of state enterprises increased than in the previous era. The logic of the military was not based on profit and loss, but was essentially driven by national security (Evans 1979, 219). The military's ideology and desire to develop Brazil's industrial potential coupled with a persistent element of nationalism accounted for its strong presence in the oil industry. Although, Nigeria became independent as a federal state in 1960, the events which followed led to the intervention of the military in politics in 1966. The military moved to

introduce a unitary system in order to reduce the power of the regions and the dominant ethnic groups. This period also coincided with an era of rising oil revenues, and some have argued that revenues from oil contributed to this centralizing tendency (Gelb and Bienen 1988, 234). Based on the fact that Nigeria's oil industry was dominated by foreign firms the military in Nigeria was also concerned about sovereignty and national security. This hastened the commitment to a strong central government and the need to make critical decisions about its uses. Due to the nature of its origins and development, the Nigerian state lacked autonomy. This was further reinforced when the military came to power and privatized the control and use of state power, with the oil industry becoming a focus for such activities. One major development in this area was the promulgation of the Land Use Decree of 1978. The ostensible rationale for this decree was to facilitate development by eliminating constraints to the access and availability of land and resources. But according to Ake (1985, 17), the latent function of the decree was far more significant than its manifest function. In reality it was meant to increase the power resources and access to power of those who had executive control of the state machinery. Under the military in Nigeria, there was the proliferation of government-owned companies and public corporations, but this was a manifestation of the tendency to forcefully coerce the economy and to accumulate primitively with the use of state power. More so, most of the corporations were largely inefficient and constituted a source of immense expense for the government. In spite of this, the decision to keep them was that these corporations were important sources of wealth. But in the long run, their existence served to retard the development of productive forces in Nigeria's oil industry.

It is imperative to state that the political context under which the sector emerged shaped the pattern of development that was to follow later in both countries. In both contexts clear political considerations affected the extent to which the state articulated its political interest, how rents were collected and allocated and the general pattern of investment in the industry. In Brazil, a tripartite alliance involving the state, multinational and local capital became a standard for investment patterns. This was initially carried out in the petrochemical complex in Brazil, but was later extended to other parts of the country in the Northeast, and it constituted the single largest impetus to industrialization in Brazil. The location of the petrochemical complex in the Northeast of Brazil, Polo do Nordeste and in Port Alegre was part of a vision to devise a strategy that would contribute to regional economic development which was typical of European countries at this time (Perrone 1972).

However, the Nigerian case the oil industry was perceived as a means of lubricating the extensive machinery of rent-seeking and political patronage in the Nigerian state. Oil has been used (with some degree of success) to hold together a “fragile and disparate” political coalition of diverse ethnic and religious interest (Ake 1985, 16). Although, the military regimes determined the pattern of oil investment in the country, but contradictions between these disparate tendencies required the existence of an independent mediator to intervene between these forces. Since the Nigerian lacked autonomy and was largely implicated in the struggle, this meant that effective mediation was impossible. The struggle over resources led to a breakdown of consensus on critical issues and this had serious economic consequences for the country. A case in point was the citing of Nigeria’s refineries. All factions of the “ruling class” were interested in the



prospects of the venture. At the end the elites from the North got a refinery to be located in their region despite the fact that all of Nigeria's oil deposits were domiciled in the southern part of the country. From an economic point of view, this was a disastrous decision. There are many instances where the contradictions within the ruling class in Nigeria have compromised the criteria of economic efficiency to the detriment of national development. The location of the Nigerian refineries presented a situation where the logic of national development was subjected to the interest of certain elites.

## **CHAPTER THREE**

### **Administration of the Oil and Gas Industry**

This chapter explores on a comparative basis the different patterns of administration in the Nigerian and Brazilian oil and gas industry. Among other things, it argues that the level of development in the sector is a consequence of how both countries have administered their oil and gas industry. Different issues are associated with the development of indigenous economic capacity in the oil and gas industry, they include: protecting and defending national interests, relations with multinational corporations, funding, technology acquisition, government policies, integrating local capacities, and broader issues relating to organization and operations. Within the context of these patterns of relations, national governments have adopted different approaches in a bid to develop local capacities in the oil and gas sector. Sometimes the approach may be apologetic, cautious, or interventionist. But these differences in approach stem from a number of concrete factors, such as, the ideological underpinnings of the governments in question, size of resource base, historical and institutional factors, structure of domestic economy, decisions of key players in the industry and various technological factors. Based on these factors, this chapter examines the administration of the oil industry in both contexts, with specific focus on the development of local firms and indigenous labour; capital and investment patterns; and technological development.

#### **The Nigerian Experience**

As earlier stated, the origin and evolution of the administrative structure in the Nigerian oil and gas sector can be traced to 1914. In that year the British colonial administration enacted the Minerals Oils Ordinance No. 17 (1914). This was followed by the Mineral (Amendment) Ordinance No. 1 in 1925 (UNCTAD/CALAG 2006, 37).

These ordinances vested the ownership of oil in Nigeria in the British Crown and granted the British a total right of alienation or deposition of all crude oil discovered in Nigeria. Since Nigeria was still a British colony, the concession covered the entire territory of the country and alienated non-British companies and citizens from acquiring mineral oil rights. This effectively made exploration of petroleum resources in Nigeria at the time an essentially British monopoly. This situation lasted until 1958 when the Minerals Oil Amendment (Act) paved the way for the entry of other non-British companies into the Nigerian oil industry. Through the Petroleum Profits Tax Ordinance in 1959, the government initiated a fifty-fifty profit sharing arrangement with foreign concerns. In 1969, the Petroleum Decree established the state's option to own shares in commercial oil ventures.

This scenario led to the nationalization of the industry by the Federal Military Government in May 1971 and the creation of the Nigerian National Oil Corporation (NNOC) through a decree<sup>6</sup>. The establishment of the NNOC made government participation in the industry legally binding and compulsory. This action was also informed by Nigeria's willingness to join the Organization of Petroleum Exporting Countries (OPEC), which mandated all member states to acquire at least 51% stake and become increasingly involved in their domestic oil sectors<sup>7</sup>. The creation of the NNOC enabled the military regime in Nigeria to consolidate its control over oil revenues. Between 1972 and 1974 it gained jurisdiction of the sale and allocation of concessions to

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<sup>6</sup> The NNOC had been established under the terms of the government's Decree no. 18 of 1971. Its brief was to participate in all aspects of petroleum including exploration, production, refining, marketing, transportation, and distribution.

<sup>7</sup> When Nigeria joined OPEC in 1971 it had to adhere to the Organization's principles and policy pronouncements. Article 90 of OPEC Resolution XVI of 1968 enjoined member states to "seek participation in the equity of existing concessions". This motivation led to the formation of the Nigerian National Oil Corporation (NNOC) as Nigeria's first state oil company in 1971, with a mandate "to engage in prospecting for, mining and marketing oil".

foreign investment, and with Decree No.6 of 1975, it increased its share of the oil proceeds to 80% and 20% to the states (Ejobowah, 2000). Through the indigenization decree (1972-1974) the NNOC's participation joint ventures with foreign firms was estimated to be around \$1.3 billion. But the revenue accrued from such ventures was even ten times more (von Lazar and Duerstein 1976, 11). This marked a remarkable increase in revenues from royalties for the state.

In 1977, the Federal Military Government under the statutory instrument decree merged the NNOC (with its operational functions) and the Federal Ministry of Mines and Power (with its regulatory responsibilities) to form the Nigerian National Petroleum Corporation (NNPC). The decree which established the NNPC made it the cornerstone of the country's oil policy, and gave it the responsibility to adequately manage all government interest in the Nigerian oil industry. In addition to its exploration activities, the NNPC was given mandates and operational interests in refining, petrochemicals and products transportation, and marketing. Between 1978 and 1989, the NNPC built refineries in Warri (1978), Kaduna (1980) and Port Harcourt II (1989). The NNPC controls all four of the country's refineries, including the first (Port Harcourt II) built in 1963. One of the most profound changes made by the Federal Military Government in the oil industry was the promulgation of the Land Use Decree of March 1978 (later referred to as Land Use Act). The decree vested the control over state land in the Military Governors appointed by the Federal Military Government, and they had the power to approve the issuance of, or revoke a certificate of occupancy in the "public interest"<sup>8</sup>.

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<sup>8</sup> This later became known as the Land Use Act in 1979. It placed all land in the State Governor (under the military this was an appointee of the Federal Military Government) who had the power to approve the issuance of, or revoke a certificate of occupancy in the "public interest".

The changes that left the oil and gas industry in Nigeria in its present state could be traced to 1988. Remarkably these changes occurred under the context of IMF/World Bank conditionalities. As a mono-product economy, the oil and gas industry became the target of extensive reforms and this was justified as a necessary measure towards economic recovery. As such, in 1988, the NNPC was divided into twelve strategic business units, covering the entire spectrum of the oil industry: exploration and production; gas development; refining; distribution; petrochemicals; engineering; and commercial investments. In 1989, the fifth participation agreement was reached and it gave the NNPC an equity participation of 60%, Shell 30%, Elf 5% and Agip 5%. This was further restructured in 1993 with 55% to the NNPC, while Elf had 10%.

However, since 1999, the oil and gas industry in Nigeria has undergone dramatic changes. These changes can be viewed as reactions to the globalization of energy markets world-wide. As such, the broadening and deepening of the process of globalization is occurring through the liberalization, deregulation and privatization of domestic energy markets, particularly in the developing countries of the world. At the forefront of the reform process in Nigeria is the Ministry of Petroleum Resources and the major changes made in the industry have channeled through the ministry. The primary responsibility of the ministry is to advise the government on policy matters relating to the management of petroleum resources. The Department of Petroleum Resources also plays a key role in the industry. Presently, the DPR sets the standards for the effective control of operations and activities in the oil and gas industry, ranging from exploration to production and marketing of crude oil and refined petroleum products.

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## **The Brazilian Experience**

The administration of the oil and gas industry in Brazil was initiated under a different environment. With the creation of the public limited oil company-Petrobras based on Act 2004/1953 (later Decree 35508/1954) a state monopoly was clearly established (Buescu 1989, 33). Since the military in Brazil was impressed with Argentina's state owned oil company (YPF) and perceived petroleum as essential to national security it established the National Petroleum Council In 1938 as a precursor to Petrobras (Wirth 1970, 139). This nationalist/statist solution to the petroleum problem was reinforced in 1950 with the election of Vargas. By 1953, the decree that established Petrobras was passed, and state monopoly over the exploration and refining of petroleum was granted to Petrobras (Evans 1979, 92). Petrobras provided the Brazilian state with the leverage to shape and direct the process of accumulation in the oil industry.

According to Evans (1979, 217), in the course of time Petrobras grew to emerge as one of the largest corporations in the world and the largest in Latin America. More so, by 1967, it had a total refining capacity of over 500,000 barrels per day, and sufficiently supplied over 90% of the demand for petroleum derivatives (Banas 1969, 48), and despite a series of unsuccessful explorations it was supplying about one-third of Brazil's crude oil by the end of the 1960s (IBGE 1972). These developments also marked the expansionism of Petrobras and other state-owned enterprises which were referred to as "the aggressive image of state capital" opposed to private participation in the oil industry. By the mid-1970s, Brazil was accused of drifting towards state capitalism. Due to its mounting foreign debt profile of \$30 billion, a trade deficit of \$3 billion to \$4 billion annually, and a shrinking foreign reserve of \$1 billion annually, Brazil could not

necessarily ignore the concerns of the international business community (Evans 1979, 270). As such, in October 1971, the Giesel administration decided to open up the oil industry and allow foreign oil companies to participate in exploration on a contract basis. As Evans (1979, 270) observes, “this reversed one of the most sacrosanct nationalist policies” which had been centered on state monopoly in oil exploration. But this did not pose a threat to the dominance of Petrobras; the participation of foreign oil firms was restricted to service contracts and did not include control over oil found in the process of exploration. Most importantly, Brazil needed to shore up its credit standing and the admission of foreign oil companies was interpreted as an attempt to “show the international financial community that Brazil welcomes foreign currency, loans and capital investments” (Economist, Quarterly Review 1975). However, after the discovery and development of offshore oil resources in the 1970s, Brazil significantly increased its production and Petrobras allied with some foreign contractors in the early years of offshore development (Neff 2005, 19).

But it must be noted that there still existed a lot of restrictions in the form of rigid government policies that prevented significant foreign participation and this contributed to delays and underdevelopment of domestic resources. According to the Energy Information Administration (2004), between 1979 and 1983, Brazilian oil production declined considerably before recovering in the 1980s. In the 1990s, the oil and gas industry in Brazil went through a series of reforms and this impacted on the administration of the industry in several ways. On November 9, 1995, the Brazilian Congress amended the Brazilian Constitution and this authorized the Brazilian government to enter into contractual agreements with any state or privately-owned

company in order to engage in activities in the upstream and downstream segments of the Brazilian oil and natural gas sector. In significant terms, this amendment was implemented by the adoption of the Oil Law, which revoked the country's initial Oil Law of 1953 and eliminated the monopoly of Petrobras. The new law also created the National Petroleum Agency (ANP-Agencia Nacional do Petroleo) and charged it with the issuing of tenders, granting concessions for domestic and foreign companies, and monitoring the activities of the oil sector, including establishing rights to explore for and develop oil and natural gas in Brazil; while the National Council for Energy Policy (CNPE) was created to set energy policies (EIA 2004). The composition of Petrobras has also been altered, although, the Brazilian government controls only 32.5% of the total equity, it has also retained 55.7% of the voting shares of the company. This makes Petrobras not state-owned, but state-controlled (OECD/IEA 2006, 2). The deregulation exercise is not evenly spread across the whole energy sector and Petrobras still remains the dominant player in the Brazilian oil and gas industry. While some areas have opened up faster and have already attracted private capital (Both foreign and local), there are areas where state-owned companies still maintain a strong presence (Research and Markets 2002).

### **Development of Local Firms and Indigenous Labour**

This section examines developments in the oil and gas industry in both contexts with a view to establish the extent to which various competencies (local labour and firms) in both economies are integrated into the industry. The level of local capacities integrated into the oil industry is a consequence of the pattern of administration adopted in both contexts. In this context, the linkage approach provides categories that structure the enquiry and permit a comparative analysis of different development paths (Hirschman



1977; 1986). For Brazil, the development of the petrochemical industry in the 1960s marked a typical example of this development path. Petroquisa, a subsidiary of Petrobras moved into a central position and managed to put together a set of companies which doubled the size of Brazil's petrochemical industry and constituted the single largest impetus to industrialization in the region (Evans 1979). The state in Brazil played a major role in the vast petrochemical complex that developed around Sao Paulo and the relations between Petrobras and oil firms places it as a valuable partner.

Unlike Brazil, the Nigerian example presents a different scenario. The roots of Nigeria's economic crisis were embedded in the structural distortions sown during colonial rule, and the manner of the subordination of the Nigerian economy to the demands of the global capitalist market. The oil boom in the 1970s resulted in a dramatic increase in the level of economic activities in the country, but it was hardly employed to redress the host of structural distortions upon which the post-colonial pattern of development was based. Some have argued rightly that the oil boom exacerbated the problem of agricultural stagnation and decline, and reinforced the structural distortions in the economy (Ogwu and Olukoshi 2002; Olukoshi 1991). Despite the attempted restructuring and division of the NNPC into several sub-entities to increase its efficiency, the organization remained largely characterized by chronic inefficiency, waste and poor management. Although, the NNPC participated in the development and exploration of numerous oil wells, the functionality of the industry was largely dependent on foreign oil firms, and the absence of state capacity relegated the organization as a subordinate partner in the state-oil alliance (Ahmad 1994).

In terms of the development of indigenous labour and personnel, Brazil and Nigeria have had different experiences. The importance of indigenous participation in the oil and gas is crucial for both countries to the extent that it can lead to the integration of oil and gas exploration, production and distribution activities, connect to the local economy, and initiate direct and indirect benefits to society as a whole. In recent times, the accelerated processes of globalization has increased global awareness and generated urgent concerns in key global institutions on the role of the extractive industry. The United Nations, World Bank Group, OECD and G-8 have emphasized the need for the oil and gas industry to take a leading role in addressing the need of their host countries by providing economic growth, enhanced social well-being and quality of life (UNCTAD/CALAG 2006, 2). Crucial to this concern is the need to for the industry to create jobs and economic activities for local suppliers, contractors and communities. More so, the importance of the development of labour in the oil and gas industry has been emphasized by the International labour Organization (UNCTAD/CALAG 2006, 2):

*“Each job in the production and refining generates from one to four indirect jobs in industries that supply the needed inputs and that benefit from the value added by oil and gas activities. In the sense that the overall economy requires suitable and reliable energy supplies, the employment effects of these sectors are even greater and extend throughout the economy”.*

The emergence of the petrochemical industry in Brazil provided the initiative for Petrobras to assume the role of training and providing labour for the oil and petrochemical industry. Evans (1979, 240) refers to Petrobras as the “School for

petrochemical management”. Apart from providing personnel and staffing its own operations, the Brazilians trained in Petrobras also filled important positions in the private sector where there is a heavy demand for Brazilian expertise. These Brazilian personnel trained in the “Petrobras School” have gained confidence owing to their participation in joint venture projects and their ability to run industrial operations in any international firm, no matter how complex or technologically advanced. However, the movement of labour from Petrobras to the private sector imposed a considerable pressure on its expansion and diversification process, this was due to the fact that Petrobras continued to provide good training and private sector salaries remained superior (Evans 1979, 246). Most importantly, as Sercovich (1980, 131) points out that the “petrochemical pole” in Brazil contributed to the generation of comparative advantage by inducing investment and learning on the part of local construction and engineering companies. This has enabled indigenous Brazilian companies to emerge as major contenders in the export of large-scale engineering projects which is a typical example of forward linkage. By keeping the Brazilian oil and gas industry closed for decades, Brazilian labour and companies were also protected while they developed skills and capacities. Although, this had adverse effects by leading to delays in technological development, it ultimately ensured that oil and gas activities, and the benefits accruable from it were internalized (Neff 2005, 22).

Since the beginning of oil operations in Nigeria one of the major challenges has been the need to develop domestic labour capacity by using the oil and gas industry as an engine of job creation and development in the Nigerian economy. But an overview of the industry reveals that in the upstream, mid-stream and downstream sectors, the skilled

labour force which involves experts and engineers are dominated by expatriates from the United States, Canada and other Western European countries; the semi-skilled labour which involves project managers, technicians and supervisors are dominated by Indonesians, Philippines, Romanians, Hungarians and Bulgarians; while the unskilled labour segment employs mainly Nigerians. Although, owing to the restiveness and insurgencies in Nigeria's Niger Delta oil communities, oil multinationals have initiated employment programmes aimed at employing youths in these areas. In concrete terms, about \$8b is spent annually in providing human and material resources in the industry; barely 10% of this amount is retained in the Nigerian economy. This is because project teams for oil and gas development and the materials for these projects are traditionally located in the home countries of the multinational firms (Local Content Report 2006). The bulk of the investments made by these multinational firms go into the importation and procurement of project equipments, others are paid as income and wages to expatriate labour. An interesting scenario occurs in the Nigerian case, where expatriates are treated as international staff, as such, their salaries are paid in the countries where the headquarters of the firms are situated. They only receive what is known as "allowances" in Nigeria and this is not taxable; the tax income accrues to the countries where they receive their salaries. For Nigeria, the need to increase the level of participation for indigenous contractors in the supply chain of the oil and gas sector is imperative. This will be necessary in order to initiate a rapid transformation of the oil and gas sector which had operated as an "enclave sector" for over three decades.

Certain bureaucratic structures also served to intensify the difference between the administrative practices in the Nigerian and Brazilian oil industry, and this has influenced

the character of personnel. In Brazil, there was a tendency towards integration inherent in the conviction of private and public sector managers, and they tended to take a common view of the aims of management. According to Evans (1979, 246): (1) the personnel of Petrobras and Petroquisa were described as having a “strong profit orientation” to the benefit of their organization. (2) Another form of cohesion took the form of movement of personnel between Petrobras and Petroquisa. (3) These personnel have been considered as “team players” due to the coherence witnessed in their relations. The Nigerian experience, however, has been contrary to that of Brazil. In the first instance, the manner in which the industry emerged and the character of the Nigerian state made it a centre for primitive accumulation. As the mainstay of the Nigerian economy, the oil industry has served as the source of corruption and embezzlement, both by public officials and its employees. The state-owned oil company NNPC has been characterized by chronic inefficiency, waste and corruption. It was revealed that massive funds were either siphoned into private accounts and expenditures, or could not be accounted for. Thus, public bureaucrats in the industry owe their allegiance not to the state, but to the government in power with whom they ally to pillage the state.

### **Capital and Investment Pattern**

By its nature the oil and gas industry encompasses a wide range of activities centered on exploration, drilling and production. The implementation of these activities is complex and capital-intensive, and requires a lot of capital from resource-rich countries. According to the UNCTAD/CALAG Report (2006, 63), financing these projects have posed challenges to oil and gas operations, and countries have resorted to a range of sources, which includes: the local financial system, foreign equity partners, international

banks, multilateral financial institutions, regional development financing institutions, export-credit agencies, and the capital markets. However, in order to maximize the potentials in the industry and ensure adequate local participation, resource rich countries have resorted to indigenous financial institutions (both national and local). This is informed largely by the need to retain profits accruing from oil and gas operation locally.

The need to provide an indigenous source of finance in the Brazilian oil industry led to the establishment of the National Development Bank (BNDE) in the fifties. As a state-owned bank, the initiative was meant to provide finance for industrial development projects in Brazil which could only be provided by the state at the time. The BNDE eventually grew to control a number of holdings in industries. While Petrobras provided the state with an opportunity to operate as an industrial entrepreneur, the BNDE provided it with the necessary financial resources to consolidate its position (Evans 1979, 92). The activities of the BNDE signaled the rising profile of state enterprises and this produced a situation in which the state accounted for at least 60% of fixed investment in Brazil by 1969 (Baer, Kerstenetsky, and Villela 1973, 30). The strong presence of the state in the oil industry is attributable to the fact that it constituted a source of inputs for other manufacturing activities.

With reference to the petrochemical industry in Brazil, Evans (1979, 227) observes that the setting up of a joint venture between the state and multinationals provided the context for bringing in the “national bourgeoisie” as a third partner and it gave the local capital a room for expanding the ambits within which it could operate. During the 1970s, having multinational partners in domestic projects in the petrochemicals also legitimized the raising of funds on international capital markets (US

Department of Commerce 1974). Thus, in the petrochemicals, Brazil successfully demonstrated and harnessed multinational capital in a nationalist agenda for local accumulation of capital. Analysis shows that in these joint venture agreements local firms emerged more profitable in the long run. While some local firms contribute only about 5% of the capital and no technology, yet, they end up with almost 30% equity (Araujo and Dick 1974). This scenario laid the foundations for the pattern of investment which emerged in the Brazilian oil industry. With process of privatization which occurred in the 1990s, Petrobras has continued to play a dominant role in the industry as a source of state capital and investment.

In the Nigerian case, the oil and gas industry experienced the dominance of the multinational corporations from its inception. As earlier stated, oil rights and concessions had been granted to British and British allied capital prior to Nigeria's independence. This structure was maintained after independence. The Nigerian state only collected rents, royalties and taxes, but with the promulgation of the Petroleum Act in 1969, the government moved in to participate in the oil industry. Subsequent events like the oil boom and the desire to join OPEC made the government to enter into joint venture agreements and acquire at least 51% stake in the oil industry, which then required some form of financial commitments on its part. More so, the absence of indigenous capital in the Nigerian oil industry was very obvious. This can be attributed to the British colonial enterprise which consciously did not create an indigenous business class. As such, foreign capital constituted the dominant force in the economy during the colonial period, and after independence it was entrenched in another form. Its essence did not change, but its form was altered to reflect the emergence of a new business class, bourgeoisie and

bureaucrats employed to manage foreign interests (Ake 1985, 20). This situation was also replicated in all strategic industries and sectors of the economy, including the oil and gas industry.

As the Nigerian oil and gas industry developed over the years the need for indigenous participation also increased. Indigenous participation in the industry relies hugely on government funds, loans or guarantee. In the face of various capital needs confronting the state, the government has not been able to meet the funding requirements of local firms who cannot mobilize funds from other sources. This has impacted negatively on local participation in the industry and the inability of indigenous firms to execute contracts in the industry. Even on the part of government, it has not been able to meet its part in the financing of projects in the oil and gas industry. As such, as part of the deregulation exercise in the industry, the government is gradually drifting away from Joint Venture Agreements (JVA) to Production Sharing Contracts (PSC). The discovery of vast offshore oil and gas deposits and the commencement of deepwater operations have led to major changes in the contractual agreements in the industry. Through the granting of deep water acreages to oil producing companies there has been a considerable shift from the JVA dispensation to PSC, with implications for the oil and gas industry in Nigeria. In specific terms, Ameh (2005) attributes this shift to two key factors: first, the complexity of offshore operations and the difficult terrain associated with it makes regulation under a JVA more cumbersome; secondly, in the face of competing demands for government resources, its participation in a JVA might not be entirely viable.



### **Technological Development**

Technological development forms an integral part of the oil and gas industry globally, and it is a major area through which the industry contributes to economic development and the generation of wealth for the society at large. At the dawn of the “modern age of oil” from the mid-19 century to the early decades of the 20<sup>th</sup> century, the technological capacities to discover and explore oil reserves were unequally distributed globally, and this was unequally matched with the distribution of potential oil reserves (Penrose 1989, 3). Thus, the physical development of global oil resources had to require the international movement of technological capacities and specialized skills. During this period, the United States remained the only country with oil reserves and the technological capacity to exploit it successfully. With this advantage, the United States soon became very prominent in the modern technology of drilling, refining, construction of refineries, transport and distribution systems (Penrose 1989, 4).

These firms possessed managerial capacities, but most importantly, they also introduced a scientific approach to address practical technological problems associated with oil exploration. Thus, it was the integration of all these technological processes of production, the administrative capacities of these firms and their global outlook that transformed and moulded the oil industry into its truly multinational form (Penrose 1968). Each of these firms with their organizational capacities and administrative framework, subsequently integrated upstream and downstream activities through their subsidiaries and established operations that spanned the globe (Penrose 1989, 4). During the 1970s, these international oil companies (IOCs) still controlled the technology deployed in the industry. But as the industry develops over the last thirty years, the industry began to discover unconventional oil-fields on-shore and in deep off-shore

waters and the need for more sophisticated, specialized technologies and practices had to be developed to face these challenges. Thus, different producing environments and circumstances have led to different forms of reaction from Nigeria and Brazil.

Petrobras' off-shore exploration began in the late 1960s and increased significantly with the discovery and development of more off-shore resources in the 1970s. With this development, the country shifted its focus almost exclusively to the development of domestic technology through licensing agreements with international suppliers. Through this means, Brazil was able to access "state of the art technology" that it could adapt to domestic requirements (Neff 2005, 19). Since technological progress in the global oil industry is an evolutionary process, Brazil was able to adapt proven tools and techniques to different circumstances and challenges which ultimately worked well for the industry. By developing the engineering plans for deepwater projects, and using and adapting technology, the Brazilian industry has become a global leader in deep-water and ultra deep-water exploration and production (Neff 2005, 20).

From the Brazilian experience, it is remarkable to note that a major contributory factor in the development of its off-shore technological base was the need to produce oil and gas in deep waters. Although, several methods have been developed in different parts of the world to face this challenge, these efforts still remain uncertain and do not prove true in all cases (Furtado and Freitas 2000). For Petrobras, the need to develop and harness national oil production according to the country's needs, while at the same time combating the challenges faced by off-shore, and later, deep water exploration led to significant changes. Thus, Petrobras transformed from being a company which essentially absorbed external knowledge to become an organization able to conceive its own

technological innovations (Furtado and Freitas 2000, 26). These changes in its external relations took the form of “traditional technology transfer agreements” to “technology transfer agreements”. This form of cooperation included different degrees of sharing of innovation costs, and external and in-house involvement in the innovation efforts (Furtado and Freitas 2000, 27).

The Brazilian experience is in direct contrast to that of Nigeria. The origins and evolution of the Nigerian oil and gas industry has already been dealt with in this study and requires no re-narration. But it is important to note that as Nigeria’s oil industry transits to oil and gas, the need for technological development has become imperative. This is against the backdrop of substantial discoveries of deep-water oil and gas reserves. It has been disclosed that a total of \$67 billion would have been spent between 2005 and 2008 on exploration and production projects in Nigeria, out of which 90% would go to foreign oil firms while only less than \$7 billion would be retained in the Nigerian economy (Daily Independent 2006). In specific terms, the benefits derived from over fifty years of oil and gas production in Nigeria have not gone beyond revenues and taxes. As such, It is absolutely imperative to develop an initiative encompassing the deepening of engineering, fabrication and manufacturing technologies in Nigeria.

Nigeria’s main challenge to developing an indigenous technological base relates to its thin industrial base which is required to develop an indigenous technological capacity in the oil industry. Nigeria has a low industrial base which is barely about 5% of the economy (Intsok 2003, 3), and this has contributed to the increased level of foreign procurement and technological inputs in the oil and gas industry. It has even been reported that oil companies import items, such as, nuts and bolts due to lack of domestic

supplies, and the steel industry in Nigeria lacks the capacity to serve the needs of the oil and gas industry (Ofurhie 2004). Although, a policy statement in Nigeria had set a date of 2005 as when detailed engineering for all projects will be domiciled in Nigeria, but this was not achieved (Daily Independent 2006). All these connect to the nature of the oil and gas industry in Nigeria and its obvious disconnection with other sectors of the economy. This approach fails to recognize and understand the needs of the oil and gas industry in Nigeria and the objective assessment of its industrial capability.

## **CHAPTER FOUR**

### **State Capacity in the Oil and Gas Industry.**

#### **A Comparative Recapitulation**

The importance of the oil and gas industry for Nigeria and Brazil brings to the fore the need to harness these resources for national development. As the industry goes through significant transformations due to the combined forces of socio-political changes, technological progress and economic trends towards globalization, countries in the developing world in particular need to adopt a comprehensive industrial and economic growth strategy to drive development in the industry. Such a strategy involves building state capacity that is capable of mediating between global and local forces for development purposes. This has become imperative against the backdrop of the structural characteristics of developing economies, such as: inadequate bureaucratic capacities, administrative challenges and the weakness of the state resulting from its composition.

Given this scenario, it is important to examine a host of related factors that account for the capacity (or incapacity) of the state to mediate meaningfully in the oil and gas industry. Thus, this chapter views state capacity as an inherently social construct. In concrete terms, it identifies, describes and illustrates practices which have socially constructed and produced the state in both contexts. This entails an analysis of how components of state capacity in the administration and management of the oil and gas industry are socially constructed and produced in specific historical contexts. The role of the Nigerian and Brazilian state in the oil and gas industry is made clearer when one understands how the state is enmeshed in patterns of social relations.

### **Implications of Variation**

This section focuses on a combination of social forces that has shaped the origin and evolution of the oil and gas industry, and its implications for the industry in both contexts. The state in Nigeria and Brazil reflect the power relations between its constitutive social forces, and this power equation must be understood in order to determine its capacity and how it is deployed in the oil and gas industry.

The Nigerian experience reflects a situation where a host of salient social forces has continued to play a decisive role. The first is foreign capital. Foreign capital has played a crucial role in the Nigerian economy since the colonial days. As a capitalist project, colonialism subjected the interest of the satellite colonies to that of the metropolitan area. This dependence which reflects and reinforces the role of metropolitan capital is also evident in the Nigerian oil and gas industry till date. Although, it has assumed different dimensions overtime, its importance has not diminished and it still remains critical for the Nigerian oil and gas industry. More so, the weakness of Nigeria's industrial base, lack of adequate technology to explore its mounting off-shore reserves and an inadequate capital base have led to a series of restructuring in the Nigerian oil and gas industry which has reinforced the role of foreign capital in the industry.

The second factor is the indigenous bourgeoisie in Nigeria. The colonial project left this class as an economically marginalized class. As a class, the Nigerian bourgeoisie is not coherent, but it shows considerable unity in defending its interest and this has shown a mark of continuity in this class. Since it inherited the reins of power it has sought to create an economic base for its political power and play a prominent role in the Nigerian economy. This has taken the form of building a material base by using its political power to generate economic power. As such, with different forms of state

intervention, it has attached itself to different forms of foreign capital and the contradictions of foreign capital are being reproduced in the social character of the Nigerian bourgeoisie (Ake 1985, 20). This in itself has contributed largely to the crisis of development in Nigeria and has also been played out in the oil and gas industry. Despite concerns about the exploitative character of foreign capital, the Nigerian bourgeoisie has been part of the structure of this exploitation and the exploitative character and activities of foreign capital has enriched the members of this class. According to Ake (1985, 20), the basic contradiction that appeared between foreign capital and the Nigerian bourgeoisie was mitigated by the Indigenization decree<sup>9</sup>. The process of indigenization was championed by the Nigerian bourgeoisie and was basically aimed at guaranteeing indigenous participation in strategic industries in Nigeria, expectedly, the oil and gas industry was at the forefront of this exercise.

Remarkably, the entire indigenization process was more interested in ownership than in control. As Ake (1985, 22) notes, most Nigerian bourgeoisie who acquired foreign enterprises were comfortable with retaining the foreign management of these enterprises. In high technology joint ventures involving government participation like the oil and gas industry, production has been left to foreign shareholders and experts who control the technology of production.

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<sup>9</sup> The Nigerian Government in its Second Development Plan (1972-1974) outlined the strategy for the realization of indigenization as follows: The Government will seek to acquire by laws if necessary, equity participation in a number of strategic industries that will be specified from time to time. In order to ensure that the economic destiny of Nigeria is determined by Nigerians themselves the Government will seek to widen and intensify its positive participation in industrial development. This could be done where necessary, by joint participation with private companies (foreign and indigenous); and, as occasion demands, through complete government control and exclusive public ownership of very strategic industries.

Ake (1985, 22) summarizes the situation as follows:

“A survey of the board of big jointly owned enterprises shows that Nigerians tend to hold the honorific position of chairman and top positions in administration, personnel and public relations, while foreigners tend to occupy the management positions of the production line. What this means is that indigenization is not really solving the problem between political and economic power after all. For it does nothing about internalizing the productive base of the economy. If anything, it reinforces its externalization, by supporting a division of labour in which the Nigerian bourgeoisie specializes in maintaining the political conditions of accumulation”.

The process of indigenization provided the basis for coercive intervention of the state in the economic process and the use of political power as a tool for accumulation. Along with this, there was the increase and concentration of wealth in the hands of the Nigerian bourgeoisie, and this involved the state heavily in business as its interest was tied up with interest of capital. This emphasized the lack of autonomy of the state in Nigeria. More importantly, Ake (1985, 22) notes that this lack of autonomy led to a class struggle by making the state more involved with interest of capital and less able to mediate the struggle of the classes and the contradiction between social capital and particular capitals.

Thus, these two forces: the Nigerian bourgeoisie and foreign capital are the two dominant social forces in the Nigerian state. The relations between them takes the form of the indigenous bourgeoisie ensuring the political conditions for accumulation, while foreign capital attends to production and provides both its technological and capital



requirements. Foreign capital accesses the Nigerian economy only through the consent of the Nigerian ruling class in a manner that erodes its autonomy. The intent to hold on to power by members of the Nigerian bourgeoisie makes them guarantee the political conditions necessary for accumulation. This places a high premium and incentive on political power, encourages accumulation by political means and reinforces the lack of autonomy of the Nigerian state. Thereby, reflecting and catering for narrow interests represented by the Nigerian bourgeoisie and foreign capital.

The Brazilian example presents a situation where international capital also plays an integral role in the domestic Brazilian economy, and the representatives of international capital are an integral part of the Brazilian social order. Similar to Nigeria, Brazil also experienced conditions of classic dependence, where capital accumulation occurred like in every other colonial enclave. But as Evans (1979, 10) argues, Brazil transited from a situation of “classic dependence” to that of “dependent development”. Placing the evolution of the Brazilian state in a historical context, it is evident that the process of accumulation which occurred in Brazil in the 1960s and 1970s assumed a different character and includes some degree of industrialization. As such, the Brazilian state internalized imperialism and assumed a new position of power from which to bargain with multinationals (Evans1979). The direct role of the Brazilian state in the oil and gas industry has increased dramatically due to this development.

With reference to the Brazilian oil industry, the end result of the process of incorporation into the international capitalist system led to the creation of complex alliance between local capital, international capital and state capital, which Evans (1979, 11) refers to as the “triple alliance”. Within the context of this alliance, each party had

different strengths, capabilities and their interests varied accordingly. So also, the workability of the “tripe” could only materialize effectively in the area of basic petrochemicals where all members of the alliance benefited from the accumulation of industrial capital in Brazil (Evans 1979, 11). This consensus explains in great detail the success of the Brazilian technological process in great detail. Like the Nigerian case, the state in Brazil also served as a powerful force in modifying the logic of multinational capital on where accumulation will take place. But in Brazil this was geared towards nationalist interests and logic of local accumulation.

From the foregoing, it is imperative to note that the state in Brazil played a central role in the transition from classic dependence to dependent development and laid the foundations for state entrepreneurship. Thus, capital accumulation was defined in essentially nationalist terms. The development of the tripe alliance involved multinational capital in a nationalist agenda for the local accumulation of capital. For the multinationals, it provided considerable access into areas where they had a strong expertise; and for the state in Brazil, there was an improvement in its industrial capacity. The nature of this alliance made it clear that in as much as it was an economic one; it was rooted in some form of social cohesion between different stakeholders in the Brazilian state. Evans (1979, 277) notes that because the participation of foreign capital in Brazil was a negotiated one, rather than a natural one, the issue of control was always a recurring theme and shared control in any venture made a commitment to strategies emphasizing local advantage more likely. This stressed the central role of the state in fostering accumulation, and its fundamental importance in the construction of alliances.

### **Local Responses to the Global Challenge**

The compared responses of Brazil and Nigeria to developments in the global oil and gas industry have varied due to state response in both contexts. As the linchpin of the global capitalism, oil exploration and production produces necessarily elicits responses from most developing countries of the world. More so, the current trend in global economic expansion occasioned by the massive growth in China, India and other emerging economies is fuelling the biggest increase in global oil and gas demand ever witnessed. According to the International Energy Agency (UNCTAD/CALAG 2006, 1), with the current rate of global growth, the demand for hydrocarbons will increase from the present level of 75 million barrels per day of oil and 220 billion cubic feet of gas, to a projected 90 million barrels of oil and 280 billion cubic feet of gas per day by 2010. This cannot be isolated from the manner in which the process of globalization itself has impacted on, and is responded to in different regions of the developing world. The focus on the oil and gas industry as a dominant theme for inquiry is not arbitrary. Rather, more than any sector, it aptly captures the dialectics between global processes and local responses in resources-rich countries in the developing world. The quest for indigenous participation in the oil and gas industry has been the pre-occupation of most resource-rich countries in the developing world, and the most formidable challenge presently faced by the industry are products of the global processes. Within this context, it is pertinent to note that developments in the global oil and gas industry actually impact, influence and condition the political economy of resource-rich countries in specific ways. This in turn leads to responses from the states, and these responses assume different forms: apologetic, cautious or interventionist. But this mediation by the state reflects its preferences and interests as defined by the dominant social forces.

State response in this sense is socially constructed. Broadly speaking, the differences between Brazil and Nigeria can be traced to the social construction of its legacies. While the post-colonial social formation imploded and emasculated the state as a relevant and formidable apparatus for governance in Nigeria; the state in Brazil remains a potent instrument for developmental purposes through the engagement in collective action encompassing: voluntary organizations, grassroots movements, new social movements and popular movements. These factors account for the capacity of the state to contend with the onslaught of neo-liberal globalization as expressed in the oil and gas industry.

Although, Brazil and Nigeria have similar administrative and governmental structures, the capacity of the state determines if these decisions are implemented or not. While Brazil has successfully achieved a measure of integration by mediating between local and global forces in the oil and gas industry; in Nigeria decisions do not necessarily follow established channels and organizational interests. This can be gleaned from the fact that Nigeria trails Brazil in all of the six World Bank governance indicators: voice and accountability; political stability; government effectiveness; regulatory quality; rule of law; and control of corruption (see *table 4-9*).

### **Conclusion:**

This study provides a comparative perspective on the oil and gas industry in two developing countries of the world, namely: Nigeria and Brazil. The importance of the industry to both countries and to the global capitalist project provides the basis for a comparative logic centered on the capacity of the state to further indigenous development in the industry. The first chapter outlines the structure of the entire project and the main

arguments. It explores the linkage theory and its application to the cases: Nigeria and Brazil. In view of the different developmental patterns and experiences of the Nigerian and Brazilian cases, there is a need to adopt a structured theory which provides the basis of explanation. As such, the manner in which the linkage theory is adopted here is a consequence of how the subject matter is constructed. The linkage theory also provides a space to examine other theoretical and analytical issues related to oil and gas development.

The second explores the development of the oil and gas industry in a comparative perspective. Adopting a historical perspective, the chapter explores the origin, evolution and development of the industry in both contexts with a view to deconstructing how state structures and roles, state and society, have emerged and contribute to local economic development in the contemporary global economy. This does not take the state as the ultimate determinant of all outcomes excluding other factors, but it follows that these concrete set of interactions link states to other structures in society: political, economic and social, and serve as the underlying basis for state involvement in economic development. Of specific importance in this context is the role of the military in Brazil and Nigeria. While in the former, the military exhibited a more professional approach to development and industrialization, in the latter, the military reinforced the contradictions in the society and became an agent of class and elite exploitation.

In the third chapter, the study embarks on an examination of the different patterns of administration in the Nigerian and Brazilian oil and gas industry. The chapter examines the administration of the oil industry in both contexts, with specific focus on the development of local firms and indigenous labour; capital and investment patterns;

and technological development. On these empirical grounds, the linkage theory gives an insight into how different aspects of the oil and gas industry have evolved and their pattern of relations with the global. It is pertinent to note that while the oil industry was perceived as part of a general response to the drive and quest for industrialization in Brazil; in Nigeria the entire edifice of development and industrialization was built on the oil industry. This led to the disarticulation of the economy with detrimental effects on other sectors of the economy.

The last chapter offers a comparative recapitulation of state capacity in both contexts. This has become imperative against the backdrop of the structural characteristics of developing economies, and the on-going transformation in the oil and gas industry due to the combined forces of socio-political change, technological progress and economic trends towards globalization. Thus, the chapter argues that state capacity is an inherently social construct. More so, it identifies, describes and illustrates practices which have socially constructed and produced the state in both contexts, and how this determines the capacity of the state to mediate in both contexts.

To understand the differences in the operation of the oil and gas industry in Brazil and Nigeria, it is necessary to move beyond the notion of state capacity, which although is important in itself, but runs the risk of being vaguely applied in this context. However, it is important to capture the social dynamics and forces which determines the capacity of the state. The difference in state capacity illustrates and illuminates major differences in the administration of the industry in both cases, but it leaves many issues unexplained. This stems from the fact that this study does not assume that perceptions, motives and choices of state officials are necessarily transparent through public pronouncements on

particular policies, but that more clandestine forces are at play which are products of large-scale struggle among societal actors.

The state in both contexts plays a crucial role in the industry, and the differences capacity of the state can be understood from the origin of the oil and gas industry, nature of administration in the industry, structure of state organization and the role of international capital. Although, these are crucial factors, more importantly, the fundamental difference is rooted in the social structures which combine to effectively define the role of the state and how it is deployed in the oil and gas industry. The creation of national oil companies in both Brazil and Nigeria were inspired by a host of economic and political reasons, the national governments used these companies to as an administrative foothold to deal with the industry. The national oil companies were also highly centralized in their administrative structure with the state having an overbearing influence on its operations. But in the execution of this function the state played different roles in Brazil and Nigeria, and this is closely linked to the social character of its constituent units. While the Brazilian state was able to juggle three roles (local, state and multinational) without allowing the superiority of anyone one these forces to distort its national interests; the Nigerian state had two dominant forces (foreign capital and indigenous bourgeoisie) whose interests were akin to each others’.

Furthermore, the external and internal dimensions of the evolution of state and oil in both cases became critical with the development of oil and gas as a valuable resource in the global economy. Both Brazil and Nigeria were confronted by global challenges associated with oil and gas exploration and production, and certain tendencies and restructuring occasioned by globalization. But qualitatively, the differences in state

capacity and the social forces at play elicited the divergent responses which occurred in both countries. In this context, the populist roots of the state in Brazil shaped the formation of the triple alliance where all local, international and state capital all combined to enhance the accumulation of capital within the country. This marks a clear difference from the Nigerian case where the state served as a source of primitive accumulation. The state-multinational oil alliance in Nigeria has intensified the efforts of the state to provide the local context for unimpeded global accumulation by oil multinationals. These divergent tendencies found expression in the oil and gas industry.



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## Tables and Figures:








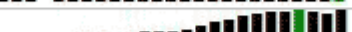




**Table 1: Proved Reserves of Natural Gas**

Country/ Natural Gas	(Trillion C / F) <i>British Petroleum</i> ( <i>Statistical Review</i> ) Year End 2005	(Trillion C / F) <b>CEDIGAZ</b> Jan 1, 2006	(Trillion C / F) <i>Oil and Gas</i> <i>Journal</i> January 1, 2007	(Trillion C / F) <i>World Oil</i> Year-End 2005
<b>Nigeria</b>	184.619	184.697	181.900	182.000
<b>Brazil</b>	10.943	10.806	10.820	11.860

**Table 2: Top 15 Countries, Crude Oil Production  
1980 - 2005 (1,000 Bbl/d)**

Country	First	1980 - 2005	Last	Low/High
Saudi Arabia	10,285		9,550	[3,778 10,285]
Russia*	11,991		9,065	[6,016 12,424]
United States	10,811		5,120	[5,120 11,192]
Iran	1,683		4,138	[1,402 4,138]
China	2,114		3,608	[2,012 3,608]
Mexico	2,153		3,333	[2,153 3,797]
Nigeria	2,060		2,627	[1,246 2,627]
Venezuela	2,246		2,564	[1,757 3,517]
United Arab Emirates	1,747		2,535	[1,272 2,681]
Kuwait	1,760		2,529	[191 2,529]
Canada	1,816		2,368	[1,639 3,110]
Iraq	2,526		1,877	[301 2,944]
Algeria	1,143		1,797	[1,025 1,889]
Libya	1,827		1,633	[999 1,827]
Indonesia	1,659		1,066	[1,066 1,712]
<b>Subtotal</b>	55,821		53,817	[47,343 57,505]
<b>World Total</b>	64,147		83,993	[58,017 83,993]

\*Russia data prior to 1989 represent production for all of U.S.S.R.  
Source: International Energy Annual 2003, Table G2, EIA; 2006 International Petroleum Monthly, Table 11.b, EIA

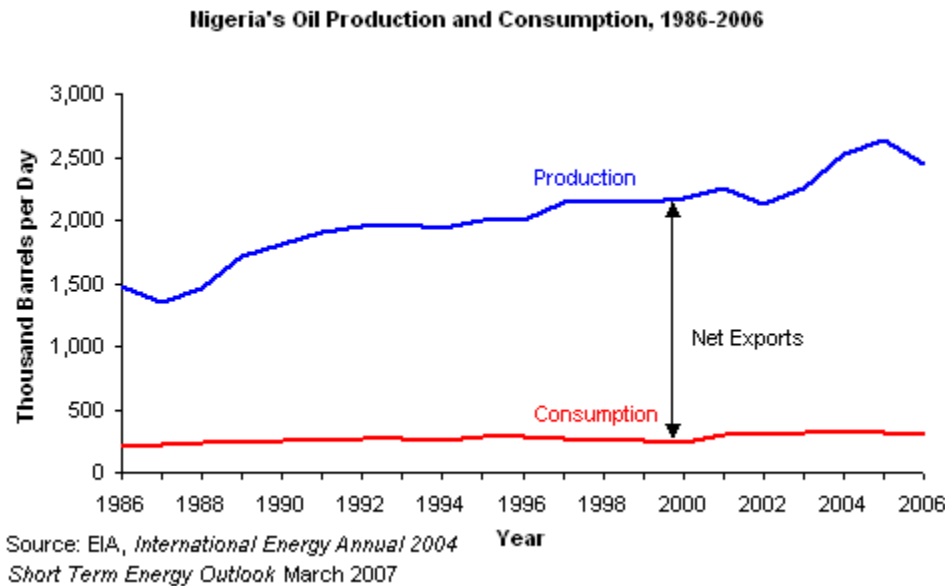
<b>Table 3: Top 10 Countries, Crude Oil Consumption 1980 - 2005 (1,000 Bbl/d)</b>				
Country	First	1980 - 2005	Last	Low/High
United States	17,056		20,656	[15,231 20,655]
China	1,765		6,950	[1,660 6,950]
Japan	4,960		5,405	[4,395 5,797]
Russia*	8,995		2,675	[2,488 9,075]
Germany	3,082		2,602	[2,557 3,082]
India	643		2,450	[643 2,450]
Canada	1,873		2,264	[1,448 2,264]
Brazil	1,148		2,200	[980 2,206]
Korea, South	573		2,170	[534 2,254]
United Kingdom	1,725		1,825	[1,531 1,850]
<b>Subtotal</b>	<b>41,784</b>		<b>49,197</b>	<b>[38,259 49,197]</b>
<b>World Total</b>	<b>63,108</b>		<b>83,620</b>	<b>[58,779 83,620]</b>

\*Russia data prior to 1989 represent production for all of U.S.S.R.  
Source: International Energy Annual 2003, Table G2, EIA; 2006 International Petroleum Monthly, Table 11.b, EIA

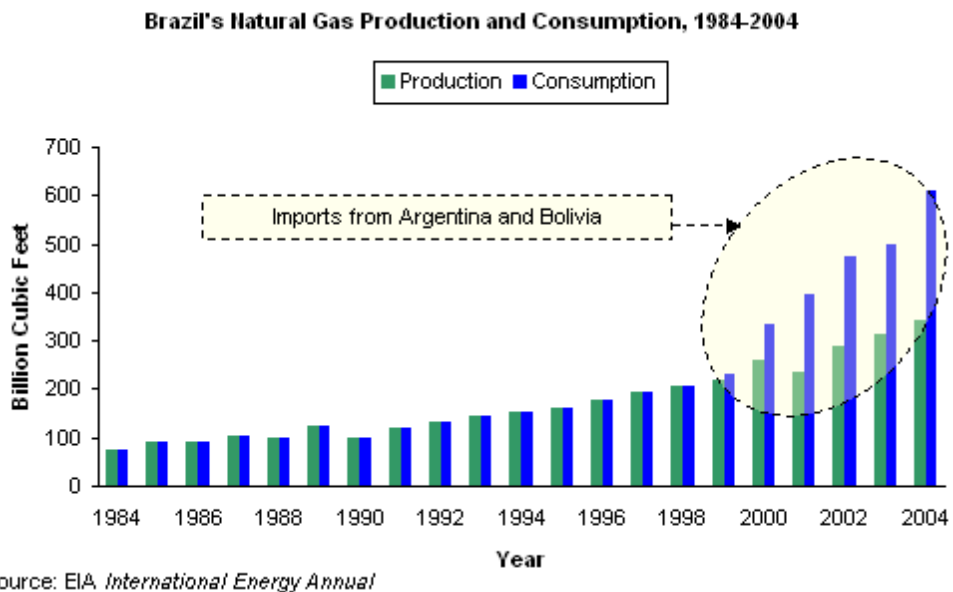
**Table 4: Proved Reserves of Oil**

Country/Oil	(Billion Barrels) <i>British Petroleum (Statistical Review)</i> Year End 2005	(Billion Barrels) <i>Oil and Gas Journal</i> January 1, 2007	(Billion Barrels) <i>World Oil</i> Year-End 2005
<b>Nigeria</b>	35.876	36.220	37.175
<b>Brazil</b>	11.772	11.773	11.925

**Figure 1: Oil Production and Consumption in Nigeria (1986-2000)**

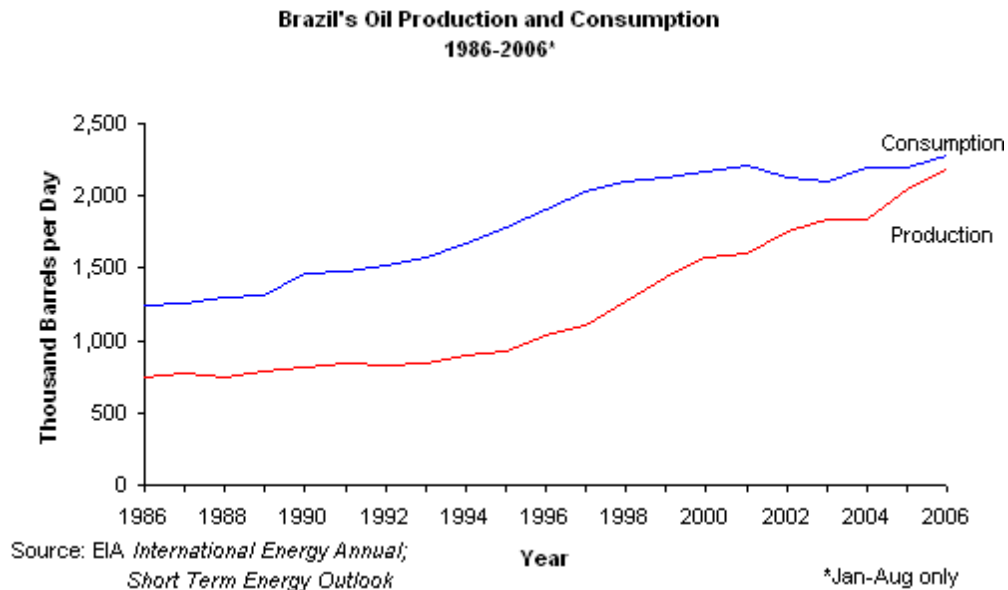


**Figure 2: Natural Gas Production and Consumption in Brazil (1984-2004)**



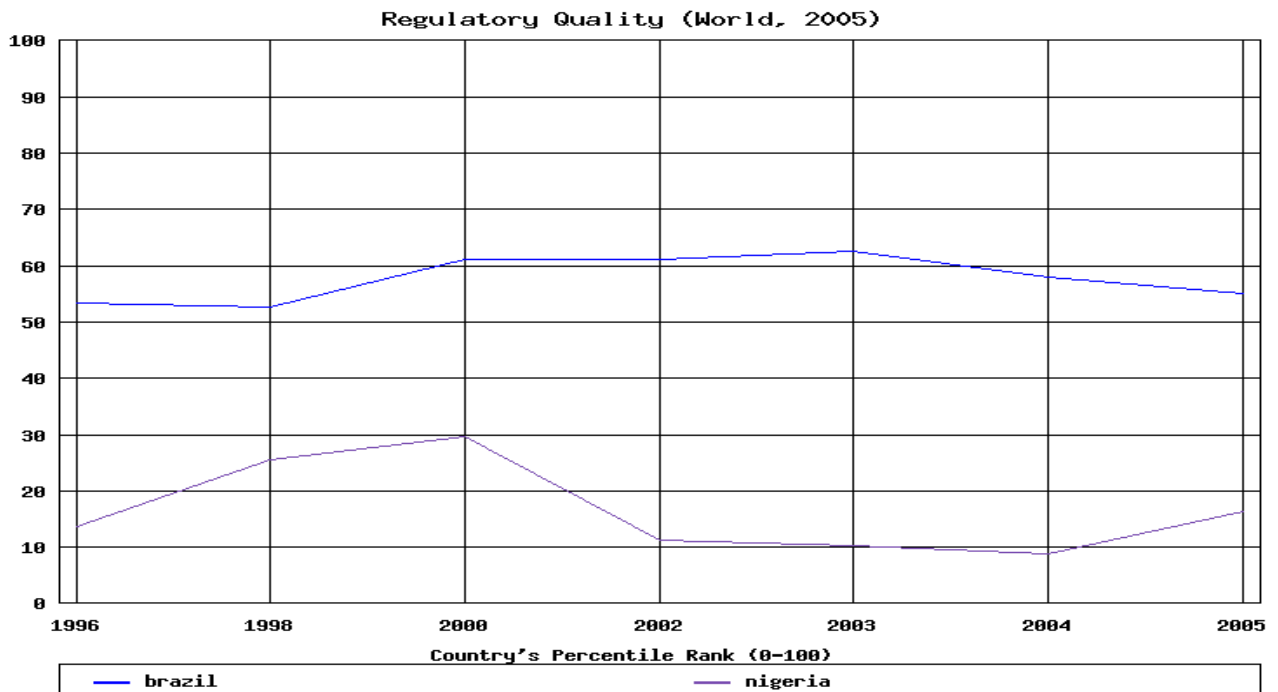
Source: EIA: *International Energy Annual*: Short-term Energy Outlook  
[www.eoearth.org/image/Oil\\_Production\\_and\\_Consumption.gif](http://www.eoearth.org/image/Oil_Production_and_Consumption.gif) (Accessed 08/05/2007)

**Figure 3: Oil Production and Consumption in Brazil (1986-2006)**



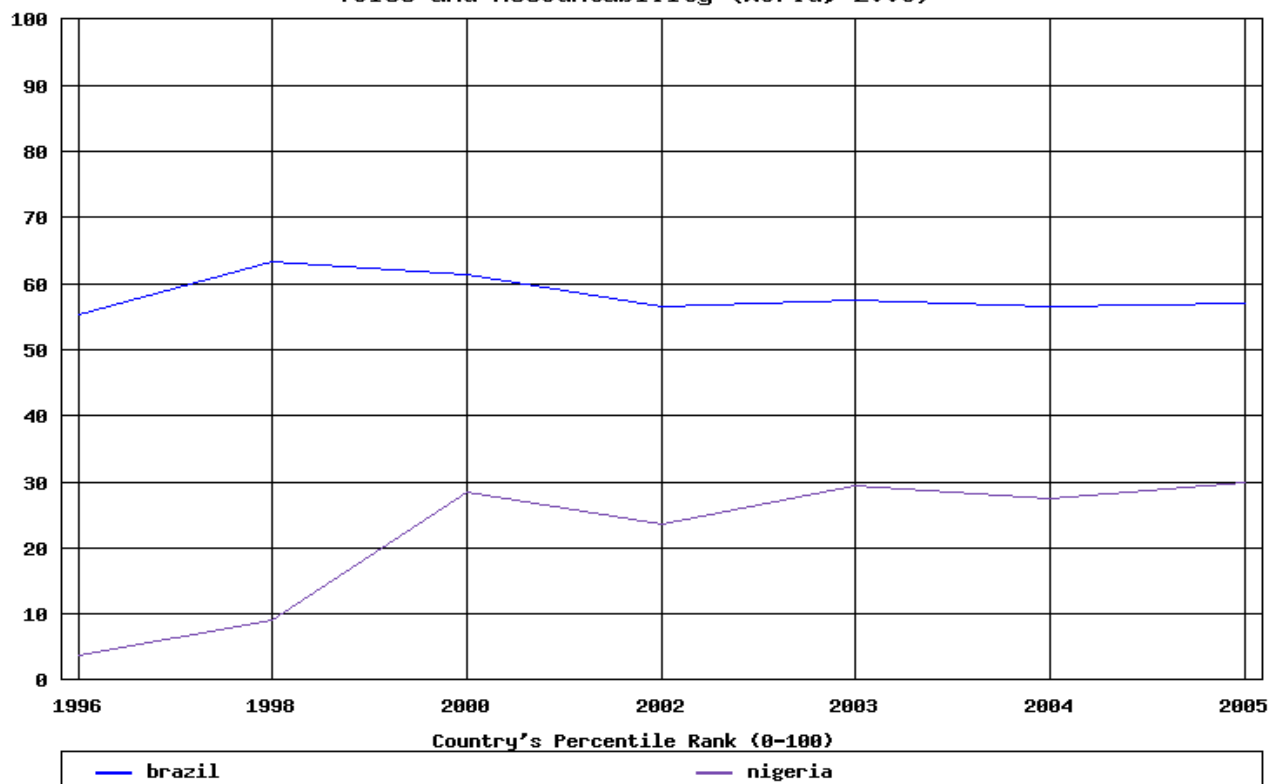
Source: EIA: *International Energy Annual*; *Short-term Energy Outlook*  
[www.eoearth.org/image/Oil\\_Production\\_and\\_Consumption.gif](http://www.eoearth.org/image/Oil_Production_and_Consumption.gif) (Accessed 08/05/2007)

**Figure 4-9: World Bank Governance Indicators:**



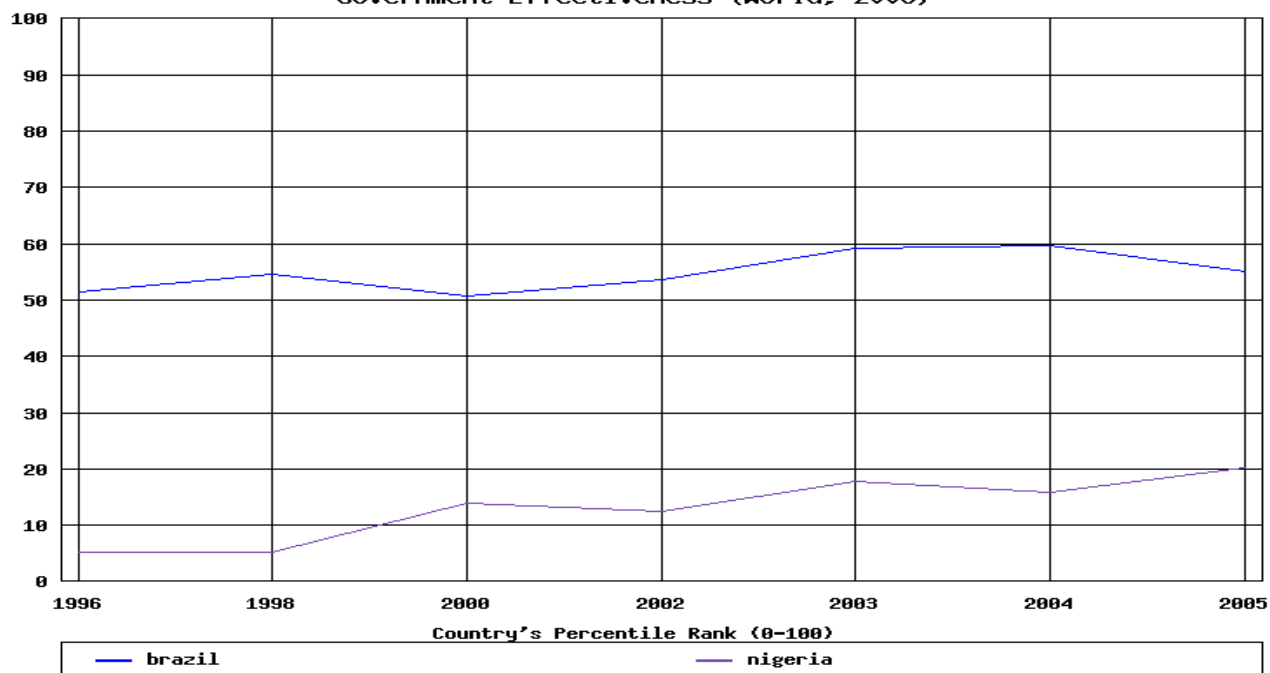


Voice and Accountability (World, 2005)



Source: Kaufmann D., A. Kraay, and M. Mastruzzi 2006: Governance Matters V: Governance Indicators for 1996-2005. (<http://www.worldbank.org/wbi/governance/govmatters5/>)

Government Effectiveness (World, 2005)



Source: Kaufmann D., A. Kraay, and M. Mastruzzi 2006: Governance Matters V: Governance Indicators for 1996-2005. (<http://www.worldbank.org/wbi/governance/govmatters5/>)

