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NNPC AND NIGERIA'S OIL PATRONAGE ECOSYSTEM

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About the National Oil Company Research Platform

While the role of the state is declining in nearly every sector of world economic activity, in hydrocarbons the pattern is quite different. State-controlled oil companies—so-called national oil companies (NOCs)—remain firmly in control over the vast majority of the world's hydrocarbon resources. Some NOCs are singular in their control over their home market; others engage in various joint ventures or are exposed to competition. PESD's study on National Oil Companies focuses on fifteen NOCs: Saudi Aramco, NIOC (National Iranian Oil Co), KPC (Kuwait Petroleum Co), PDVSA (Petróleos de Venezuela) , ADNOC (Abu Dhabi National Oil Company), NNPC (Nigerian National Petroleum Corporation), PEMEX, Gazprom, Sonatrach, CNPC, Petrobras, Petronas, ONGC, Sonangol, and Statoil.

These enterprises differ markedly in the ways they are governed and the tightness of their relationship with government. NOCs also vary in their geological gifts, as some are endowed with prodigious quantities of "easy" oil while others must work harder and apply highly advanced technologies; some have sought gas, which requires different skills and market orientation than oil, while others stay focused on liquids. These case studies explore whether and how these and other factors actually explain the wide variation in the performance of NOCs.

About the Authors

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NNPC and Nigeria's Oil Patronage Ecosystem

Mark C. Thurber, Ifeyinwa M. Emelife, and Patrick R.P. Heller

1. Introduction

Any attempt to analyze Nigeria's national oil company, the Nigerian National Petroleum Corporation (NNPC), must first confront the question of what it really is. Despite its formal organization as a vertically-integrated oil company, NNPC is neither a real commercial entity nor a meaningful oil operator. It lacks control over the revenue it generates and thus is unable to set its own strategy. It relies on other firms to perform essentially all of the most complex functions that are hallmarks of operating oil companies. Yet unlike some NOCs it also fails to fit the profile of a government agency: Its portfolio of activities is too diverse, incoherent, and beyond the reach of government control for it to function as a government policymaking instrument.

Nigeria depends heavily on oil and gas. Hydrocarbon activities provide around 65 percent of total government revenue and 95 percent of export revenues (EIA 2010a; Federal Ministry of Finance / Budget Office of the Federation 2008).¹ While Nigeria supplies some LNG to world markets and is starting to export a small amount of gas to Ghana via pipeline, the great majority of the country's hydrocarbon earnings come from oil. In 2008, Nigeria was the fifth largest oil exporter and tenth largest holder of proved oil reserves in the world (EIA 2010b).²

NNPC sits at the nexus between the many interests in Nigeria that seek a stake in the country's oil riches, the government, and the private companies that operate most oil and gas projects. The best NNPC employees have good expertise in hydrocarbons and genuinely seek the best for the company and the nation, although they often lack the institutional support they need. The worst use their positions principally as a route to personal gain.

NNPC plays a number of roles in the oil sector through the activities of its manifold divisions and subsidiaries (see Box 1).³ First and foremost, the company is a sector manager and quasi-regulator, using the approval authority of its subsidiary NAPIMS (National Petroleum Investment Management Services) to assert control over the international oil companies (IOCs)

¹ Per capita oil export revenues for Nigeria remain low, approximately \$214 in 2009 as calculated from figures in the *OPEC Annual Statistical Bulletin* (OPEC 2009).

² According to the U.S. Energy Information Administration (EIA 2010b), Nigeria in 2008 exported 2.03 million barrels per day of oil and held proved oil reserves of 36.2 billion barrels.

³ While Box 1 includes the divisions and subsidiaries that are most material to the functioning of NNPC in our opinion, there are many other corporate divisions that we have not listed. These include, for example, Accounts, Corporate Audit, Corporate Planning and Development, Engineering and Technology, Finance, Human Resources, Information Technology, Investment, Nigerian Content, Renewable Energy, and Research and Technology (Nwokeji 2007).

operating in Nigeria. Second, NNPC is a buyer and seller of oil and refined petroleum products. Third, NNPC plays an operational role in upstream, downstream, and gas transport activities, though none of its operational ventures is as yet a success.⁴ (NNPC also plays a role in LNG operations through its participation in Nigeria LNG, but we treat this company as a special case as it is only 49% owned by NNPC.) Fourth, NNPC is a service provider to the Nigerian oil sector.

Box 1 Most Significant Divisions and Subsidiaries of NNPC

Interface with IOCs

NAPIMS National Petroleum Investment Management Services

Crude Oil Buyers and Sellers

COMD Crude Oil Marketing Division

PPMC Pipelines and Products Marketing Company

HYSON Hydrocarbon Services Nigeria (marketing JV with Vitol)

Operational (Upstream and Natural Gas)

NPDC Nigeria Petroleum Development Company (exploration & production)

NGC Nigerian Gas Company (natural gas pipeline operation)

NLNG Nigerian LNG (LNG facility operation, 49% NNPC-owned)

Operational (Downstream)

WRPC Warri Refining & Petrochemical Company

PHRC Port Harcourt Refining Company

KRPC Kaduna Refining & Petrochemical Company

EPCL Eleme Petrochemicals Company Limited

Services

NETCO National Engineering & Technical Company (engineering design)

IDSL Integrated Data Services Limited (seismic data processing)

With isolated exceptions, NNPC is not very effective at performing its various oil sector jobs. It is neither a competent oil company nor an efficient regulator for the sector. Managers of NNPC's constituent units, lacking the ability to reliably fund themselves, are robbed of business autonomy and the chance to develop capability. There are few incentives for NNPC employees to be entrepreneurial for the company's benefit and many incentives for private action

⁴ Upstream arm NPDC has only a small share of total oil operations, the refineries have always operated far below design capacity, and gas pipeline operator NGC has not been able to create a viable domestic gas market.

and corruption. It is no accident that NNPC operations are disproportionately concentrated on oil marketing and downstream functions (as indicated in a rough way by the breakdown of major divisions and subsidiaries in Box 1), which offer the best opportunities for private benefit.⁵ The few parts of NNPC that actually add value, like engineering design subsidiary NETCO, tend to be removed from large financial flows and the patronage opportunities they bring. In this study, we make the following principal observations about NNPC and the Nigerian oil sector.

First, NNPC is the centerpiece of a system that performs poorly at the task of maximizing long-term oil revenue for the state. NNPC serves as a mechanism for administering the oil sector and transferring hydrocarbon wealth to the government, most significantly through sales of oil and gas to which NNPC is entitled from its joint ventures with IOCs. However, NNPC also imposes massive burdens on the oil sector—it ties oil operators in red tape, which increases costs and uncertainties and deters investment.

Second, NNPC functions well as an instrument of patronage. Each additional transaction generated by its profuse bureaucracy provides an opportunity for well-connected individuals to profit by being the gatekeepers whose approval must be secured, especially in contracting processes. NNPC's role as distributor of licenses for export of crude oil and import of refined products also helps make it a locus for patronage activities. Indeed, the implicit government goal for the oil sector appears to be the maximization of patronage opportunities; government policies have been too inconsistent to allow discernment of any more explicit objectives.⁶ Ever since Nigeria's independence in 1960 the country has evolved a host of patronage mechanisms that defuse threats to power and help hold a potentially fractious republic together. NNPC plays an important role in this ecosystem of patronage, though it is hardly the only institution with this function.

Third, the fundamental organization of the Nigerian oil sector has remained surprisingly stable over time despite the country's perennial political turmoil. Foreign oil companies control all operations, revenue flows to the federal government, and there are few independent regulatory checks on the sector. These basic realities have remained unchanged through numerous political realignments, including three transitions from civilian to military rule and three transitions back again. The basic structure of the industry has remained constant even in the face of numerous efforts to "reform" the oil sector, including the original creation of NNPC in 1977 through the merger of its precursor, the Nigerian National Oil Corporation (NNOC), with the federal regulatory authority at the time, the Ministry of Mines and Power. We will argue in this study that Nigeria's failures to develop operational, policymaking, and regulatory

⁵ We thank Alexandra Gillies for pointing out this relationship.

⁶ Angola offers a counterexample of a country with similar resource endowments whose government has acted coherently to assure dependable and growing revenues. As members of a homogeneous elite under pressure to survive, Angola's leaders were far more unified than Nigeria's as they developed oil, allowing them to focus on creating an attractive investment climate that would most reliably deliver the oil revenues they needed to prosecute a civil war.

capability reflect the patronage equilibrium that has entrenched itself in Nigeria's governing institutions.

The remainder of this study explores how NNPC's position within Nigeria's broader ecosystem of oil-based patronage affects its organization, functioning, and performance. In section 2, we review Nigerian history relevant to the oil sector, focusing on salient points of both political development and oil industry evolution. In section 3, we examine the most important interactions between the Nigerian government, NNPC, and the IOCs that actually extract Nigeria's oil. In section 4, we consider how NNPC and the Nigerian oil sector more generally perform on various dimensions, including as a means of distributing patronage. Finally, in section 5, we conclude by looking at how corruption, bureaucracy, and non-market pricing reinforce each other in the Nigerian oil sector, and what this implies about the prospects for reform of Nigeria's oil institutions.

2. History of Nigerian Oil and Institutions

Whether or not one believes that Nigeria was inexorably "cursed" by the discovery of oil within its borders in 1956, there is no doubt that oil-related factors have become interwoven with the country's political development. We explore that history in two parts. First, we examine the country's political development, and in particular the evolution over time of an increasingly sophisticated patronage system fueled by oil revenues. This system has arguably helped to hold the federation together, albeit at a high cost in economic inefficiency and stunted development of political institutions. Second, we trace the development of oil and gas operations in the country, concluding with some discussion of the present-day problems in the oil- and gas-producing region of the Niger Delta. In this discussion of Nigeria's political and hydrocarbon development, NNPC itself is most notable for its lack of direct relevance except as an administrative tool for government revenue collection through its formal role as majority joint venture partner with IOCs. At the same time, it is impossible to understand the functioning of NNPC in isolation from the broader logic of why the Nigerian oil sector developed as it did and how it works today.

2.1. Oil and Nigeria's Political Development

At the time Nigeria gained independence from Britain on October 1, 1960, oil revenues remained too small to affect politics in a substantive way. Most of the young republic's early problems centered on the struggles between the three major ethnic groups—Hausa/Fulani, Yoruba, and Igbo—which predominated in the Northern, Western, and Eastern administrative regions, respectively (Diamond 1995). The country's political parties largely mirrored these

ethnic and regional origins. Gridlock, disagreement, and a series of political crises caused the civilian republic to collapse in a 1966 military coup.⁷

By 1966, oil-related considerations had started to noticeably affect the country's politics, though oil was far from the only driver of political developments. Significant oil resources were located in the Igbo-dominated Eastern region, which focused attention on the question of how power and revenues would be distributed among regions. Igbo leaders were already nursing grievances against the national government⁸ and pushed for secession of the Eastern region—a move that would leave them directly in control of substantial oil revenue in the future.⁹ In May 1967, President Gowon—after failed attempts at reconciliation—pushed in the other direction, splitting the four Nigerian states into 12 in an attempt to undercut the dominant regional/ethnic political cleavages by creating jurisdictions heavily populated by other smaller ethnic groups.

Gowon's move was an early use of a tactic that future leaders would often employ when the Nigerian Federation was under threat: the creation of additional state and local jurisdictions.¹⁰ Such jurisdiction creation can function as patronage writ large—a tactic of splintering opposing coalitions by buying off elements within these coalitions with the promise of revenue from the center. From the perspective of control over anticipated future oil revenue, the increase in the number of states placed the Igbos in an even weaker position than under the previous status quo. This economic rationale in conjunction with existing political complaints plausibly played some role in the decision of Igbo leaders in the Eastern Region to secede as Biafra, precipitating a horrific civil war that ran from 1967 to 1970 and ended with an Igbo defeat.¹¹

Mindful of the potential for regional and ethnic cleavages to threaten central power, later politicians turned political parties into instruments for re-distributing spoils more broadly throughout the country. That approach created powerful vested interests in redistribution. During the civilian Second Republic from 1979 to 1983, the party of President Shehu Shagari

⁷ These crises included an increasingly vicious dispute between regions over census results that would determine ethnic/regional representation in government, as well as some unwanted interventions in Western politics by the East and North (Diamond 1988; Bevan et al 1999). The government of the First Republic had also been generally corrupt and incapable of delivering stability and economic benefits, leading the military coup to be widely welcomed by the populace (Diamond 1995).

⁸ The January 1966 coup was widely viewed as favoring the Igbos; the July countercoup replacing General Ironsi—an Igbo who had been installed as President after the January coup—with Yakubu Gowon was in turn a major blow to the Igbo elite (Bevan et al 1999).

⁹ Calculations by Scott Pearson at the time suggested that an independent Eastern region could expect to control more than half of the country's oil revenues by the early 1970s (Pearson 1970).

¹⁰ The splitting off of a new Mid-Western region from the Western region in 1963 could be argued to have been the first use of state creation as a political tool, although this earlier instance was not connected to the promise of oil revenues.

¹¹ Estimates vary widely, but at minimum hundreds of thousands died, primarily in the East. Many civilian fatalities were the result of associated famine.

(NPN, the National Party of Nigeria¹²) perfected this technique,¹³ and the Nigerian political system solidified into its current form as a sophisticated patronage network.¹⁴ Tactics to maintain stability of the system included the creation of more jurisdictions in response to local pressure for revenue, the rotation of the presidency among the three major ethnic groups,¹⁵ and the balancing of the presidential cabinet with two members from each state (Bevan et al 1999). At the same time, the distribution of centrally-collected oil windfalls to state and local jurisdictions in fact bred dependence and the endless pursuit of a bigger allocation rather than autonomy. A collection of states that might otherwise have no reason to bind themselves together instead evolved into a relationship of false federalism (Suberu 2001).

Civilian and military governments alike proved incapable of effectively handling windfalls from oil. The quadrupling of oil prices in 1973-1974 resulted in a massive infusion of revenue that Gowon's military government was completely unprepared to manage prudently. As Tom Forrest describes, "economic policy was passive and took the line of least resistance"—taxes were cut, salaries and wages increased, and the naira appreciated against foreign currencies (Forrest 1995). Budgets ballooned,¹⁶ making the government critically dependent on oil almost overnight. By 1974, oil provided 80% of government revenue and 95% of exports (Lewis 2007 p136), figures not too different from those prevailing today. With few effective accounting mechanisms in place, corruption developed on a massive scale, yielding huge rewards for those connected to government¹⁷ (Diamond 1995; Forrest 1995; Lewis 2007). Following another oil price spike in 1979, corruption scaled even greater heights, while regulatory bodies inside and outside of the oil sector remained impotent (Diamond 1995).

Following Shagari's re-election at the end of 1983 in a contest marked by significant fraud, the military seized power again in January 1984, gaining popular legitimacy from its promise to stamp out corruption and repair the crumbling economy. A long period of military rule followed, interrupted briefly in 1993 by the interim civilian regime of Ernest Shonekan, which fell in part due to dismay over its effort to raise the heavily-subsidized prices of domestic fuel (Lewis 2007). Only after General Sani Abacha died of an apparent heart attack in 1998¹⁸—

¹² Highlighting one difference between the First and Second Republics, the NPN was a truly national party. Accordingly, it sought to stay in power through the development of a truly national patronage network.

¹³ Tom Forrest commented that the NPN might more aptly have been referred to as the "Party of National Patronage (PNP)" (Forrest 1986).

¹⁴ As Bevan et al (1999) point out, a patronage system—which relies on a continual stream of income—inherently creates incentives at odds with sound economic management.

¹⁵ This arrangement, which arguably continues to this day, highlights the role of Nigerian elections as complex mechanisms for distributing resources and influence rather than as true referendums on government performance.

¹⁶ Government expenditure in this first oil boom gravitated towards infrastructure, grandiose and poorly-conceived industrial projects, and a worthwhile but poorly-administered drive to improve the educational system (Forrest 1995). State enterprises of all kinds proliferated.

¹⁷ An incident that exemplified the excess of the era—including the way that government contracts could be inflated to provide massive rents to everyone involved in a transaction—was when a Ministry of Defence order for a vastly excessive quantity of cement clogged the port of Lagos with ships in 1975 (Forrest 1995). Contracting remains the principal vehicle for corruption in Nigeria today.

¹⁸ There were rumors that Abacha's death was engineered from within the military.

having allowed the civil service and public enterprises to atrophy as he diverted ever larger sums of money to himself and his cronies (Lewis 2007)—did the military itself orchestrate a more durable return to civilian rule. Political parties were re-constituted¹⁹ and elections held during the transitional regime of Abdulsalami Abubakar, with the result that former military leader Olusegun Obasanjo, who had himself turned power over to civilian rule in 1979, returned to power as a civilian president in 1999.

The civilian regime of Olusegun Obasanjo was contradictory, for it pursued substantial reforms, yet in many ways business continued as usual. Perhaps the most significant achievement of the Obasanjo administration was its skillful macroeconomic management. Nigeria eliminated most of its previously massive debt, in part by containing expenditures and utilizing revenues from high oil prices more wisely than past governments. It also followed sound monetary policy and reformed its financial sector (Gillies 2007). With much fanfare, Obasanjo helped establish anti-corruption bodies, including the Economic and Financial Crimes Commission (EFCC) and, for the oil and gas sector, the Nigerian Extractive Industries Transparency Initiative (NEITI). These entities have had some real and impressive positive effect. At the same time, overall progress towards reform has been mixed at best. NEITI has brought heretofore unavailable oil sector data into the light, but it has not yet managed to effect broad changes in governance and accountability.²⁰ Furthermore, Obasanjo diminished his own anti-corruption credibility both by preserving elements of business as usual that benefited him personally as well as by using some of the new anti-corruption bodies like the EFCC against his political opponents (Gillies 2007).²¹ Obasanjo's unsuccessful push for a third term in office and perceived manipulation of the 2007 presidential election was particularly damaging to his reputation as a reformer.

2.2. History of Oil Operations in Nigeria

Under British rule, a joint venture between Royal Dutch Shell and British Petroleum²² dominated petroleum activities, receiving an initial concession in 1938 that covered all of Nigeria (Pearson 1970). Shell-BP made a small commercial discovery in 1956 at Oloibiri in the Niger Delta, leading to the first production and exports from Nigeria in 1958. Following Shell's discovery, a number of major foreign companies obtained licenses and began pursuing oil activities in Nigeria. The first offshore oil discoveries were made in 1963 by American Overseas

¹⁹ Many military officers acted to protect their own interests by joining these nascent political parties (Lewis 2007).

²⁰ Nicholas Shaxson (2009) offers a detailed critique of NEITI.

²¹ The most visible example of this occurred in connection with what became a seamy public spat between Obasanjo and his vice president Atiku Abubakar, in which each aired significant dirty laundry on the other. Obasanjo used the EFCC and a handpicked panel to indict Abubakar (Nwokeji 2007). While in general the public believed that Abubakar was indeed guilty (Gillies 2007), the impression left by the whole affair was that Obasanjo was far from untainted himself.

²² The joint venture was originally known as Shell/D'Arcy Exploration Parties and later renamed the Shell-BP Petroleum Development Company of Nigeria Ltd.

(later to become part of Texaco, which in turn became part of Chevron) and early 1964 by Gulf (later to become part of Chevron) (Chevron 2009). Numerous significant oil fields²³ came on-line in Nigeria throughout the early and mid 1960s, driving an increase in total production from 20,000 barrels/day in 1960 to 420,000 barrels/day in 1966, as displayed in Figure 1. The high quality of Nigerian crude, which was mostly light and sweet (low-sulfur), assured a ready market (Ahmad Khan 1990).

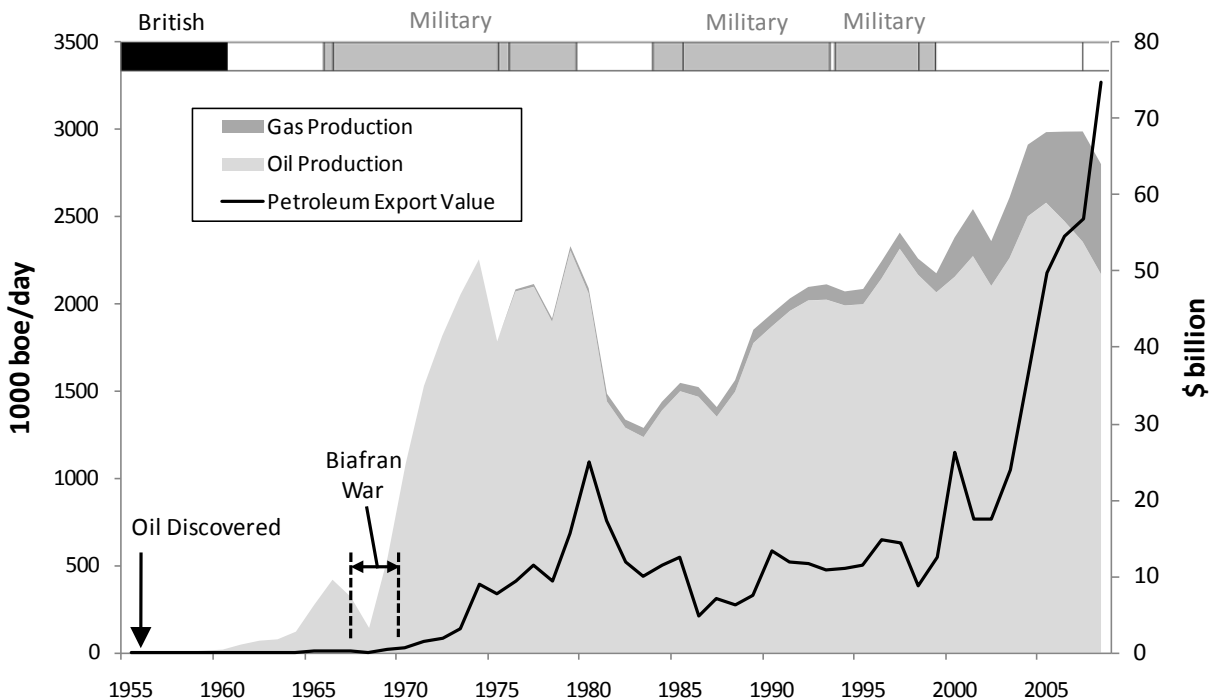


Figure 1 History of Nigerian oil and natural gas production, showing annual petroleum export value as well as the type of government in power (black = British colonial rule; white = civilian rule; gray = military rule). Data sources: BP (2009); OPEC (2009); OPEC (2005); Pearson (1970).

The Biafran War curtailed oil output in 1967 and 1968, though with no significant damage to productive capacity.²⁴ (Biafra extended from the Niger Delta and Niger River east to the Cameroon border, thus spanning a large portion of Nigeria’s oil resources.) The more significant long-term impacts of the war on Nigerian oil administration stemmed from the way

²³ One characteristic of Nigeria’s geology is that oil has tended to be spread out over a large number of relatively small fields.

²⁴ Most onshore oil and gas facilities were not in Igbo-dominated areas, and the Nigerian government gained control over them early in the conflict (Bevan et al 1999).

that it strengthened the victorious central government and encouraged it to assert national control over oil.

The perceived support of France's Safrap for Biafra was a particular spur towards reducing dependence on foreign oil operators (Onoh 1983). The desire to join OPEC may also have encouraged Nigeria's push towards greater state participation in oil—OPEC was at the time pressing member countries to secure robust national control over their resources, including by acquiring at least 51% of foreign oil operators (Ahmad Khan 1999). The Petroleum Act of 1969 restricted oil licenses to Nigerians or Nigerian-incorporated companies (Ahmad Khan 1999). In 1971, the government began to acquire IOC assets (including a 35% share of Safrap); created an NOC, the Nigerian National Oil Company (NNOC)²⁵; and became a member of OPEC. Throughout the 1970s the government nationalized increasing shares of foreign oil concessions in Nigeria; as of July 1, 1979 it had increased its stake to 60% of all major concessions in the country (Ahmad Khan 1999). These partially-nationalized entities became the principal NNPC-IOC joint venture companies that still dominate production in the country today (see Table 1 in section 3).

Oil production exploded in the early 1970s on the back of exploration and development success. As previously mentioned, oil revenue windfalls followed dramatic price jumps in 1973-1974 and 1979-1980. However, world oil demand contracted sharply in the early 1980s, and unwise policies under President Shagari²⁶ left Nigeria ill-prepared to adapt, contributing to a precipitous drop in Nigerian oil output in the early 1980s. Output did not recover to near previous levels until the early 1990s.

Development of Nigeria's natural gas resources has been much slower than in comparison countries with similar potential (Shepherd and Ball 2006), largely as a result of the country's unfavorable policy environment. Gas infrastructures (pipelines or LNG facilities) are expensive and their benefits accrue to investors only after many years of reliable operation; they are therefore nearly impossible to build in the absence of markets and a regulatory framework that foster confidence in long-term cost recovery. In Nigeria, controlled domestic prices for gas and for the electricity it can be used to produce have been the principal culprits in discouraging the development of domestic demand and associated gas infrastructure. Helpless to change basic pricing policies, NNPC's gas subsidiary, the Nigerian Gas Company (NGC), operates existing domestic pipelines but is limited in its ability to significantly expand the domestic market. And only within the last 15 years has Nigeria been able to create an investment framework

²⁵ The establishment of NNOC was part of a larger trend that saw Nigeria create a number of state-owned companies in the 1970s (Forrest 1995).

²⁶ Shagari reversed the previous military government's pragmatic policy of preserving oil production and revenues by letting IOCs lift more oil than their formal equity share when NNPC could not find sufficient customers. This policy change, coupled with a stubborn refusal to adjust price in a timely fashion to respond to plunging world demand, contributed to a precipitous drop in Nigerian output in the early 1980s. Sarah Ahmad Khan points out that this production decrease was not significantly related to either OPEC quotas (which were tightened for Nigeria after a significant output drop had already occurred) or to deficiencies in production capacity (Ahmad Khan 1994).

sufficiently inviting to encourage the extremely high investment needed to develop LNG trains for gas export. As will be discussed in section 3, it did this in part by relegating NNPC to a minority stake (49%) in the venture.

Because most of Nigeria's gas is associated gas, more than 95% of lifted gas was flared in the first two decades of the hydrocarbon operations (Ahmad Khan 1994). Flaring has been formally outlawed since 1984, and yet repeated deadlines for ending the practice have passed unmet. The most recent deadline to pass was in 2008, with about 40% of gas produced still flared as of November 2008 (Izundu 2009a).²⁷ As discussed above, insufficient infrastructure exists to collect and use all of the associated gas domestically or for export, and the government for its part has little incentive to shut down revenue-generating oil fields in order to enforce the no-flaring edict.

After three decades of fitful effort, Nigeria finally became a natural gas exporter in 1999 when it delivered its first cargo from the Bonny LNG terminal (Shepherd and Ball 2006). Due to periodic concerns about the strength of the gas market and government vacillation that heightened an already high perception of political risk, the Bonny LNG project fell apart and was re-launched twice (in 1982 and 1993) before finally coming to fruition. Gas production has increased since then, with the opening of a fourth and fifth train at Bonny in 2006 and a sixth one in 2008. Other proposed LNG projects in the country are moving slowly. A Chevron-led pipeline to deliver gas to neighboring Benin, Togo, and Ghana (the West African Gas Pipeline, or WAGP) was originally to have been on-line by the end of 2006 but was delayed repeatedly, including because of funding disputes and damage to feeder pipelines in Nigeria (Petroleum Economist 2009). Limited quantities of gas had begun flowing to Ghana as of early 2010 (Daily Independent 2010).²⁸ The prospects for a far more ambitious project than the WAGP—the Trans-Sahara Gas Pipeline (TSGP) to deliver Nigerian gas to Algeria and then on to Europe—remain much more nebulous. Some worry that the TSGP is a distraction from the more important goal of increasing domestic gas handling capacity and demand (Brower 2009).

A striking aspect of Nigeria's recent oil sector performance has been the precipitous drop in crude oil production from a peak of around 2.5 million barrels/day in 2005 to a nadir of as low as 1.6 million barrels/day in July 2009, although monthly production appears to have recovered to around 2.0 million barrels/day as of this writing (IEA 2010). The main reason for the decrease was increased strife in the main producing region of the Niger Delta (see map in Figure 2); the EIA (2010a) estimated that Nigerian oil production in 2009 fell at least 30% short of capacity as a result of militant attacks on oil infrastructure.²⁹ The capabilities of militants to disrupt operations through activities like sabotage and hostage-taking for ransom have grown in recent

²⁷ In January 2010 the legislature set a new deadline of December 31, 2012 for ending flaring (Nzeshi 2010).

²⁸ NNPC's Group Managing Director Sanusi Barkindo claimed that the Niger Delta amnesty facilitated the improved gas supply situation (Daily Independent 2010).

²⁹ OPEC quotas for Nigeria are currently set near the level of actual production (IEA 2010). However, based on past experience, it seems that the problems in the Niger Delta are a much more real constraint on production than OPEC quotas, and that Nigerian production would increase very substantially if Niger Delta violence were to disappear.

years. Militant actions that had previously been largely confined to onshore installations began to touch offshore facilities in early 2006 (Mouawad 2006) and reached their most audacious heights to date with a June 2008 raid on a Shell rig 75 miles offshore (Polgreen 2008). In addition to these direct attacks on oil-producing installations, organized oil theft from pipelines (“bunkering”) may divert around 10% of production—worth millions of dollars per day—before it reaches IOC tankers (The Economist 2008b; Vanguard June 2009a). Insecurity in the Niger Delta leads not only to lost revenue but also to dramatically increased operating costs,³⁰ as IOCs are forced to pay more to security providers, oil services companies (many of which have pulled out of onshore operations in Nigeria), and employees.³¹ An amnesty deal with Niger Delta militants in August 2009 appears to have eased the security situation somewhat of late and allowed restoration of some lost production, but it is unclear whether the truce will hold over the longer term.

³⁰ We thank Alexandra Gillies for emphasizing this point.

³¹ Of course, if environmental degradation in the Niger Delta is charged to criminal activities and the difficulty of environmental remediation in a conflict zone, the tally of environmental costs associated with problems in the Delta could be astronomical. IOCs tend to argue that it is these factors more than their own practices that have resulted in the despoliation of the Niger Delta.

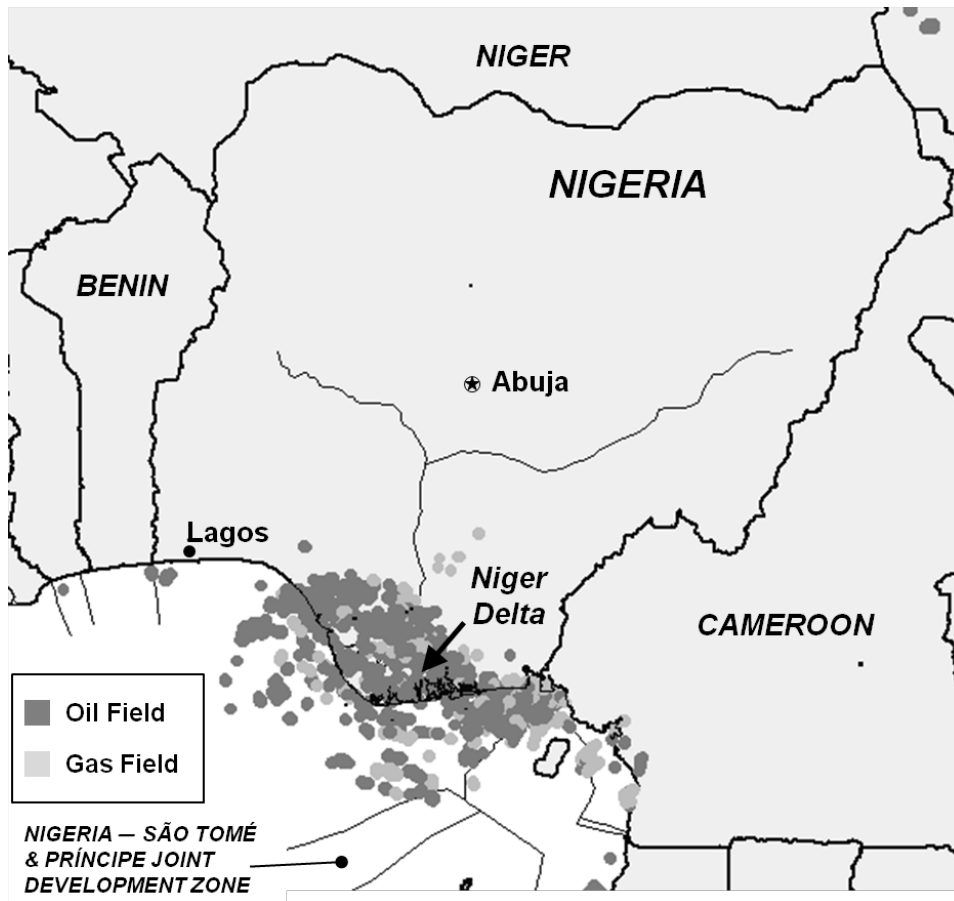


Figure 2 Nigeria map showing location of oil and gas fields. Data source: Wood Mackenzie (2010).

A detailed analysis of the complex causes of the conflict in the Niger Delta (not to mention further discussion of its human toll) is beyond the scope of this paper, but some aspects of the situation in the Delta connect to other themes of this study. The unrest can be viewed through a number of lenses, all of which have some validity and are not mutually-exclusive. First, in line with the public proclamations of militant groups in the Delta, the conflict can be seen as the rising up of oppressed and impoverished people who have suffered from environmental degradation and destruction of livelihoods associated with oil extraction but have not shared in its economic benefits. This viewpoint lays primary responsibility for the Niger Delta's woes at the feet of the international oil companies, NNPC, and/or the Nigerian government at various levels. The fact that most of those suffering from the despoilment, violence, and anarchy in the Delta belong to minority ethnic groups that have been left out of the principal horse-trading in Nigerian politics between dominant Hausa-Fulani, Yoruba, and Igbo ethnicities layers an ethnic dimension on the basic grievance.

Second, the strife in the Niger Delta can be viewed as the natural flourishing of criminality in an environment in which governing and security institutions and the economy more generally have broken down (DonPedro 2006). A lack of alternative options for productive economic activity—unemployment rates were estimated by one Nigerian study to exceed 80% in Rivers and Delta states (Nigerian Institute of Social and Economic Research 2006)—facilitates ready recruitment by militias. And notwithstanding their Robin Hood political rhetoric about increasing the share of oil revenues going to the people of the Niger Delta, there is little evidence that money which armed groups like MEND (Movement for the Emancipation of the Niger Delta) generate from oil theft, kidnapping, and payoffs is used for anything but the enrichment of its leaders (Connors 2009).

Third, the patterns of violent competition in the Delta can be seen as an extension of the dense web of patronage that governs political dealings in Nigeria. The rise of the Delta militia groups has been closely linked to the machinations of key government figures seeking to use patronage networks to capture elected office³² or a greater share of economic rent. There is widespread speculation that Rivers State Governor Peter Odili was the major patron supporting the rise of Alhaji Mujahid Dokubo-Asari, who later became the leader of MEND (ICG 2006a), and that Odili turned around and funded Asari's rival Ateke Tom when the governor had a falling out with the militia (PESD Interviews). Furthermore, according to government officials and IOC executives who spoke with the authors, certain state and federal government officials are suspected to be receiving income from illegal activities of the militant groups. For example, the diversion of oil from pipelines to unauthorized oil tankers offshore is a technically challenging and highly visible activity that would likely be impossible without high-level support in government.³³

The problems in the Niger Delta represent an extreme manifestation of a vicious cycle that plagues Nigeria and its oil sector more generally. Government (and militant) activity centers around short-term competition for resources, not on provision of services or establishment of a stable longer-term framework for productive economic activity. In the absence of broad-based, strong institutions, individuals (and companies) seek to advance their interests by tapping into their private networks of people who can get things done. Connections to government officials or, in the Delta, to militant groups, can be particularly effective. Thus, for example, IOCs themselves may knowingly or unknowingly support the very groups that terrorize them through “surveillance contracts” that blur the boundary between protection and extortion, (ICG 2006b). In 2008, NNPC's group managing director allegedly stated in congressional testimony that NNPC had paid a substantial “protection fee” to militants in order to assure the security of a

³² Historically, it has not been uncommon for politicians in Nigeria to enlist armed militias to prevent opposition voters from reaching the ballot box (Smith 2007).

³³ As one oil sector participant described it: “You can see the oil theft, it's blatant. If you fly over the Delta in a helicopter, you can see it with no problem at all. It's everywhere.... [Government officials] know the theft is taking place, but they don't do anything to stop it, because it's connected to people high up. The boundaries between politics, criminality, and business are very vague.” (PESD Interviews)

pipeline, although the company subsequently claimed that his statement had been taken out of context (Daily Trust 2008; Leadership 2008; Vanguard 2008).

Seen in light of this overall dynamic of institutional breakdown, the idea that fulfillment of the leading militant demand—an increase in the percentage of oil revenue that is allocated to state and local governments through the so-called “derivation formula”—will resolve the problems in the Niger Delta seems highly suspect. Spending by sub-national governments already accounts for almost half of consolidated government spending in Nigeria, and the accountability mechanisms at state and local levels are virtually non-existent. There is no evidence that existing allocations to states and localities have been effectively translated into development. Increasing these allocations in the absence of improved measures to create jobs and government accountability to citizens seems likely to exacerbate the current problems by raising the stakes in the intense resource competition that already exists in the Delta.

3. State-NOC-IOC Relations

3.1. “Strong” President, Weak Institutions, and Sisyphean Cycles of Reform

The president is the central figure in the Nigerian government and sets the tone for interactions between the state, NNPC, and the IOCs. There have historically been few limits on the president’s freedom of action in making government appointments and directing the civil service and public enterprises. Since the return to civilian rule in 1999, there has been some modest strengthening of institutions of civil society like the media and NGOs that counterbalance presidential power. The federal legislative body, the National Assembly, increasingly wields some veto power through its control over legislative or constitutional changes,³⁴ although it remains mostly ineffective as a check on the executive branch of government. The best recent demonstration of constraints on the president’s power came in 2006, when civil society groups, the media, and the National Assembly, collectively supported by substantial international pressure, joined forces to scuttle Obasanjo’s bid for a constitutional amendment that would have allowed him to run for a third term.

Conspicuous by their absence are independent, effective government policymaking or regulatory bodies that could provide continuity in oil policy and a real check on the players in the oil sector. Government policymaking in oil is mostly rudderless and reactive, with IOCs able to have a large influence and domestic interests including NNPC able to block reforms that threaten their positions. Regulatory institutions are unable to exert effective oversight over IOCs, NNPC, or any of the other players in the Nigerian oil sector. As one example, the under-resourced government bodies responsible for collection of taxes and royalties—FIRS (the Federal Inland

³⁴ The President is rarely able to accomplish his legislative goals without extensive consultation, cajoling, and deal-making with members of the legislature, even within his own party (CIDCM 2003).

Revenue Service) and DPR (the Department of Petroleum Resources), respectively—have little capability to question sophisticated IOC accountants and often have difficulty coordinating among themselves (Hart Group 2006b). The result is under-collection of revenues. Equally serious is the inability of DPR, NNPC, or any other regulatory entity to accurately measure flows of petroleum within Nigeria and across its borders. The result is an environment in which both outright oil theft (as discussed in section 2) and shady trading (as discussed later in this section) flourish.

Both overlap of regulatory responsibilities and self-regulation are common, as highlighted by Nwokeji (2007) and Gillies (2009). Notably, while DPR is the formal regulatory body, NNPC often plays the role of *de facto* regulator through its interactions with IOCs. Conflicts of interest are inevitable. For example, NNPC both regulates local content and in theory can supply it.³⁵ Also, NNPC is responsible for cost regulation in the joint ventures while simultaneously serving as the majority partner in these ventures.³⁶

Efforts by various presidents to “reform” NNPC and oil administration more generally have frequently involved either splitting out a regulatory and/or policymaking body from the NOC or re-incorporating one into it. NNPC was originally formed in 1977 by combining the government’s commercial and regulatory arms in oil. Under the later military regimes of Buhari (1983-1985) and Babangida (1985-1993), efforts were made to re-establish regulatory independence. Under Abubakar in 1998, the regulator was again eliminated. Under Obasanjo’s civilian regime starting in 1999, the Ministry of Petroleum Resources was restored, but Obasanjo made himself Petroleum Minister and Chairman of NNPC. (Nwokeji (2007) provides an excellent historical review of the institutional changes in the oil sector.)

The historical lack of success in establishing an independent regulator despite outward efforts to do so is part of a pattern of lurching reform that does nothing to sustainably alter the functioning of the petroleum sector. As described in detail by Nwokeji (2007), initiatives to reform NNPC and the oil sector have been put forward by many Nigerian presidents. Such efforts have often been focused on organizational forms, leaving intact the basic power dynamics, institutional dysfunctions, and deficiencies in human capacity that support the status quo. Also, because the Nigerian system has lacked adequate constraints on the president’s power, reforms instituted by one leader have frequently been quashed, intentionally or not, by a subsequent one. A nascent effort to create an independent NNPC Board under Babangida, for example, came to nothing when interim President Shonekan’s petroleum minister dissolved the Board because of corruption within NNPC (Nwokeji 2007). More generally, Babangida’s attempts to create organizational clarity and a more commercial approach within the sector were

³⁵ Nigeria’s new local content law could ease this particular conflict of interest by assigning local content regulatory responsibilities to a dedicated monitoring board, though whether this is successful in practice remains to be seen.

³⁶ We acknowledge our debt to Alexandra Gillies for pointing out both of these examples.

undone by an Abacha regime that prioritized the re-direction of a huge fraction of oil rents directly to Abacha himself (Lewis 2007).³⁷

We suggest that there are two principal ways to think about why reform and institution building efforts have failed. First, the failure of reforms illustrates a fundamental paradox about the Nigerian political system. On the one hand, the center is “strong,” in that Nigeria’s president is able to redraw the contours of government bodies and decide who sits in important (and lucrative) government positions.³⁸ The President’s ability to influence NNPC appointments is a key aspect of this power. On the other hand, the President’s ability to fundamentally alter the basic parameters of governance—for example, to improve institutional capacity, reduce corruption, or change the relationship between the federal government and the states—has appeared limited. As described in section 2, the president sits at the top of a pyramid of patronage, with the best ability to steer benefits towards his associates. However, the fact that the president’s power depends on success in delivering patronage can prevent him from altering the nature of the pyramid that he ascended to get to where he is. As demonstrated by Nigeria’s unstable succession of chief executives, presidents who do not keep their demanding patronage networks satisfied while at the same time steering clear enough of national catastrophe to maintain their basic legitimacy will soon be replaced.³⁹

Second, the failure to achieve reform can be seen as representing a failure of will on the part of politicians to break with the habits that have gotten them to the top and set aside personal benefit for the good of the nation. Even presidents who have understood the need for reform have not wanted to be personally constrained by it. Major reform efforts under the 1999 to 2007 regime of Olusegun Obasanjo seemed contradictory for just this reason. Obasanjo restored the Ministry of Petroleum Resources and its regulatory branch, the Department of Petroleum Resources. However, he then made himself Petroleum Minister and Chairman of the Board of NNPC,⁴⁰ removing any pretense of independence on the part of the ministry and NNPC. In another example, the Obasanjo administration initiated the Oil and Gas Sector Reform Implementation Committee in 2000 but then failed to act on its 2004 recommendations, which included measures to strengthen DPR and make NNPC more autonomous.⁴¹ The feeble

³⁷ While the Nigerian president has traditionally benefited from his control over the oil sector, what distinguished Abacha from other rulers was the degree to which he blatantly siphoned money directly from oil revenues to himself, totally heedless of the damage that this might inflict on the sector (Lewis 2007 p240).

³⁸ In the current civilian republic dating from 1999, the president has been slightly more constrained by the legislature in his ability to do this.

³⁹ This fundamental character of Nigerian governance has been largely continuous through both civilian and military rule. Governments, whether civilian or military, that fail to deliver prosperity, are seen to be unusually corrupt, or transgress accepted norms of patronage, are vulnerable to coups. Sani Abacha for example, dismayed even his own military in his capriciousness, extreme brutality, and concentration of benefits upon his person.

⁴⁰ Obasanjo dissolved the NNPC Board completely before leaving office.

⁴¹ The OGIC recommendations went on to form the basis for the Nigerian Petroleum Industry Bill, which is currently under consideration in the Nigerian legislature.

resources allocated to DPR⁴² (and to Nigerian regulatory and policy bodies historically) support the premise that the appetite of the president for a truly independent regulatory authority is limited (PESD Interviews).

3.2. Government-IOC Interactions

The Nigerian government has periodically introduced special incentives to maintain IOC interest in the face of a high government take and challenging operating environment. Such incentives, however, can place even more strain on government oversight capabilities. In the late 1970s, with IOC activity at risk of slowing as a result of rising government taxation, the government offered faster capital write-downs and reduced initial taxes to encourage investment (Wood Mackenzie 2009). A major change in incentive structures followed the collapse of oil prices in the mid-1980s, in the form of a Memorandum of Understanding (MOU) that guaranteed IOCs in joint ventures with NNPC a minimum profit margin (Wood Mackenzie 2009). The MOU allowed IOCs the choice of opting out of the standard petroleum profit tax (PPT) regime and instead paying a revised government take (RGT) based on non-transparent, oil-price-dependent terms in the MOU document (Oil and Gas Accounting Unit 2005). The MOU proved successful at generating significant investment (World Bank 2004a),⁴³ although at some cost to transparency. At the same time, the NEITI financial audit for 2005 suggests that the government has not properly administered the complex regime of the MOU overlaid on top of the PPT, with oil companies in Nigeria able to get away with overly favorable interpretations of the tax rules (Hart Group 2008).

The history of incentives for the development of natural gas shows the limitations of policy inducements in the face of systemic institutional failures. Significant incentives for investment in the upstream gas sector were put in place in the late 1990s, including a zero royalty rate, a reduced tax rate, and a more favorable capital allowance rate and investment tax credit than for oil (Wood Mackenzie 2009). Unfortunately, these liberal incentives⁴⁴ did nothing to address the fundamental deficiencies in the natural gas sector—the lack of adequate systems for

⁴² As one example of a critical resource limitation, the NEITI audit for 1999-2004 pointed out deficiencies in information technology at DPR—especially problematic for a regulatory body whose functions require data collection (Hart Group 2006a). One DPR official we spoke with also lamented the inability of the organization to obtain funds to renovate its building after 12 years of trying (PESD Interviews). DPR's funding must be approved by the Ministry, President, and National Assembly. DPR can suffer from its subservience to Ministry bureaucrats; one interviewee with long experience in the sector suggested that DPR's higher pay scales lead to resentment within the Ministry, which in turn translates to lower funding for DPR (PESD Interviews). DPR salaries are on the same scale as those at NNPC (PESD Interviews), though lower than those available in private industry. The rationale (also applied by other countries in their oil sectors) is to limit the extent to which competent personnel at the technical regulator are poached by the NOC or other private players.

⁴³ The MOU was revised in 1991 and 2000 to increase the guaranteed notional profit margin (Wood Mackenzie 2009).

⁴⁴ In fact, some efforts have been made to blunt the impact of the incentives, with the rationale that they are overly generous to the oil companies (PPT Amendment Bill 2006; World Bank 2004a p33).

transporting the gas and then marketing it at profitable rates—with the result that Nigeria’s natural gas production and utilization have continued to fall far short of potential.⁴⁵ Gas producers sell most of their gas to the Nigerian Gas Company (NGC, a subsidiary of NNPC), which in turn markets it to domestic end users, the largest of which is the state-owned Power Holding Company of Nigeria (PHCN). Artificially low power prices have stunted the development of the domestic gas market, and NGC has had difficulty collecting payments it is owed by PHCN.⁴⁶ As expressed in its Gas Master Plan, the government appears to be aware of some of these problems. However, it has thus far lacked the political will to address the core issues of gas and electricity pricing, even in the face of chronic deficiencies in electricity quantity and quality nationwide.⁴⁷ Government actions have instead focused on politically easier solutions that do not address the root problems, like pressuring IOCs to develop gas-fired power plants on an independent power producer (IPP) basis (Ariweriokuma 2009; PESD Interviews).

In a number of ways, the IOCs would seem likely to benefit if the Nigerian government could fix fundamental sectoral dysfunctions rather than simply papering them over with compensating incentives. These companies would see reduced costs and possibly increased development opportunities from a hydrocarbon governance regime that imposed less bureaucracy, uncertainty, and insecurity than Nigeria’s does. It is far more straightforward for IOCs to operate within a unified and consistent administrative regime like Angola’s.

On the other hand, there are potential benefits to IOCs from the current system in Nigeria. First, the failure to develop significant operational capacity within NNPC or other indigenous companies means that IOCs remain central to hydrocarbon activities in Nigeria. Second, the lack of technical expertise within NNPC keeps it from having any real bite in its oversight role through NAPIMS, meaning that IOC cash call demands cannot easily be verified and controlled. Third, the lack of strong independent regulation through DPR and FIRS allows IOCs to interpret tax rules in an aggressive manner without being challenged.⁴⁸ Fourth, as mentioned above, IOCs are often successful in lobbying for ad hoc incentives to counterbalance unfavorable features of Nigeria’s operating environment. Fifth, when IOCs do run into serious conflicts with government bodies including NNPC, they have developed informal channels that allow them to resolve conflicts in a manner satisfactory to them (PESD Interviews).

The net result is what appears to be a conflicted attitude within IOCs towards the possibility of reform. While improvement in the country’s oil institutions could in theory make

⁴⁵ In the face of basic uncertainty about how to monetize natural gas, IOCs have been particularly reluctant to develop fields that consist entirely of gas, as opposed to fields that have oil with associated gas (PESD Interviews).

⁴⁶ The NEITI 1999-2004 audit reported that PHCN’s precursor, the National Electric Power Authority (NEPA), owed NGC arrears of 6.7 billion naira (about \$53 million). (Hart Group 2006c p16-17)

⁴⁷ NEPA’s power transmission loss in 2004 was estimated at 40%, and businesses and household in Nigeria who want reliable power (and can afford it) are forced run on private generators (World Bank 2004b; Hart Group 2006c).

⁴⁸ According to petroleum economist Obo Idornigie, who worked at NEITI, FIRS civil servants generally have insufficient training in the particularities of the petroleum industry and the complex calculations used to determine royalties, deductions, and PPT under the MOU framework (see Heller (2007)).

IOC operations in Nigeria more straightforward and profitable, it could also disrupt a system within which IOCs play the dominant role and have learned to operate more or less successfully. Perhaps as a result, IOCs have tended to be quite supportive of reform ideas in their early stages, but increasingly wary as ideas have advanced further towards implementation or actually been put into practice. IOC concerns can be legitimate or self-interested or frequently both. Many IOC executives have expressed concern about possibly unfavorable tax implications of the Petroleum Industry Bill (Izundu 2009b), even though they may approve in principle of other provisions in the bill to correct institutional deficiencies, such as the idea of creating incorporated joint ventures (IJVs) that would control their own revenue streams (PESD Interviews).⁴⁹

3.3. NNPC-IOC Interactions

While the President and the National Assembly interact with IOCs at a high level through the creation of legal carrots and sticks, NNPC mediates most of the government's day-to-day functional interaction with IOCs. Historically, the great majority of Nigerian production has come from NNPC-IOC joint ventures operated by the IOC (see Table 1 for a listing of the current JVs). However, as shown in Figure 3, the fraction of production governed by standard JV terms has dropped significantly in recent years, largely in response to the government's inability to adequately fund the JVs. Some existing JVs have turned to Modified Carry Agreements (MCAs) whereby the IOCs pay NNPC's share of upfront costs on certain fields—this arrangement is also referred to as “alternative funding.” All new contracts with foreign companies since the 1990s have taken the form of production sharing contracts (PSCs), mirroring global trends towards this administrative arrangement. In a PSC, the operating oil company fronts all costs and then reimburses itself from revenues in the event hydrocarbons are discovered and developed. Figure 3 highlights the significant growth in production from PSCs in Nigeria between 2005 and 2007. While the PSCs reduce government risk and resolve the funding dilemma, they tend to reduce government take over the longer term according to the Nigerian Ministry of Finance (Federal Ministry of Finance / Budget Office of the Federation 2008).⁵⁰

⁴⁹ Even the IJVs might start to look less appealing to the NOCs if they move towards becoming a reality. One potential concern is that they would bind the IOCs uncomfortably tightly to NNPC and the Nigerian government.

⁵⁰ The contribution of another type of business arrangement, the service contract, remains negligible for the time being (Federal Ministry of Finance / Budget Office of the Federation 2008). Only two service contracts, both with Agip, were active at the time of this writing (Wood Mackenzie 2009).

Joint Venture	2008 Liquids Production ('000 b/d)
60% NNPC / 40% ExxonMobil*	512
55% NNPC / 30% Shell* / 10% Total / 5% Agip	354
60% NNPC / 40% Chevron*	347**
60% NNPC / 40% Total*	207
60% NNPC / 20% Agip* / 20% ConocoPhillips	139
60% NNPC / 40% PanOcean*	27

*operator

**figure includes 12,000 b/d from former NNPC/Texaco joint venture

Table 1 Table of all significant joint ventures with NNPC, with 2008 liquids production for each. PanOcean is the one Nigerian operator. The Shell, Chevron, and Agip JVs saw the most impact on 2008 production figures from militancy in the Niger Delta. Sources: NNPC (2010) and Ariweriokuma (2009) for JV ownership shares; Wood Mackenzie (2009) for production figures.

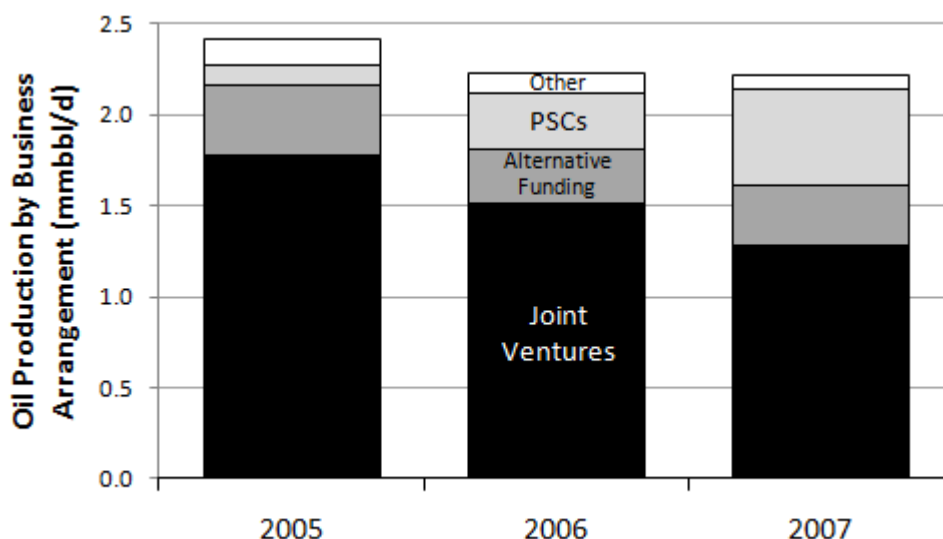


Figure 3 Nigerian oil production by business arrangement. Data source: Federal Ministry of Finance / Budget Office of the Federation (2008).

Through its interactions with IOCs, NNPC in effect provides most regulatory functions for the oil sector. In practice, the most important arm of NNPC in discharging this role is its division NAPIMS (National Petroleum Investment Management Services). NAPIMS serves as the first-line approver of the yearly budgets for the IOC-led JV companies, and then it is the conduit through which the government is supposed to fund its share of each JV in monthly “cash

calls.” NAPIMS also acts as the government’s agent under the PSC framework—it is responsible for negotiating and signing a PSC with each company that is awarded a hydrocarbon license. Critically, operating companies must obtain NAPIMS approval for the great majority of contracts tendered.⁵¹ NAPIMS and higher-level NNPC management can strongly disagree at times, causing particular problems when both of their approval is required. At times a given oversight responsibility seems to be explicitly assigned to more than one division of NNPC—for example, both NAPIMS and the Nigerian Content Division of NNPC appear to be charged with maximizing local content in contracting. While the PSC framework removes the chronic problem for IOCs of collecting on cash calls in JVs, one IOC executive pointed out that many of the NNPC approval processes faced by IOCs operating under PSCs are equivalent to those for JVs (PESD Interviews).⁵²

For the IOC, the various required interactions with NNPC create a bureaucratic thicket that adds significantly to the cost of doing business in Nigeria. Processes around contracts are particularly problematic, for several reasons. First, the contract approval process is exceedingly slow and bureaucratic. One IOC executive said that it takes at least 12-18 months, and often significantly longer, to put in place a contract of any significance, as compared with 3-4 months from tender to award in other parts of the world (PESD Interviews). Second, a high percentage of contracts are subjected to a cumbersome sign-off process due to approval thresholds that are very low given the capital intensity of the petroleum industry. NAPIMS approval is required for any contract of greater than US\$500,000 (Office of the US Trade Representative 2010),⁵³ which several IOC executives estimated to comprise 80-85% of contracts (PESD Interviews). Most contracts additionally require the sign-off of the NNPC Executive Council and the NNPC Board (of which President Obasanjo served as chairman during his tenure). Large tenders are passed for approval to the Federal Executive Council, which is headed by the president (Gillies 2009).⁵⁴ Third, NNPC rules favor short-term contracts, typically limiting contract duration to two years or less. This both multiplies the number of contracts that need to be approved and makes it more difficult to attract quality contractors. With the expectation of aggressive bidding on cost and the requirement that contractors develop and employ significant local content, competent and serious firms may decide that they simply cannot make money by participating.

Problems associated with the contracting regime are further exacerbated by bureaucracy in the approval of yearly budgets for the joint venture operating companies. Significant delays are introduced by the need to obtain approval of the budget from NAPIMS, NNPC corporate, the Ministry of Finance, and then the National Assembly (Hart Group 2006d). An IOC executive

⁵¹ NAPIMS defends its position as gatekeeper zealously and can inflict headaches on IOCs and other parts of NNPC if it feels that this prerogative is not respected (PESD Interviews).

⁵² Whereas a JV company needs to secure NNPC funding through a cash call, an IOC in a PSC needs to secure approval for the amount of “cost oil” that can be used to reimburse expenses.

⁵³ According to a presentation from NAPIMS, the threshold in PSCs is \$250,000.

⁵⁴ NAPIMS and NNPC employees themselves expressed frustration with some of the bureaucratic hurdles that slowed down project execution—such as the low authority limits for contract approval. However, they said they felt constrained to follow the procedures in place, including by the threat of a potential audit.

with whom we spoke said that his company's budget for 2008 had still not been finalized as of September, even though the company had already committed significant money by that point. Since government funds are chronically short and authorities generally lack the technical capability to critically evaluate IOC proposals, the process becomes a somewhat aimless one in which the JV's budget allocation is typically lowered at each approval stage (PESD Interviews). IOCs respond by inflating their original budgets. The final government budgetary commitment may fall short of the funding the operator says it requires. In addition, the government may end up paying less than its upfront commitment in the monthly "cash calls" that are intended to cover NNPC's share of JV costs. Failures to fund the cash calls to the requested levels can delay JV investments in oil operations (Chukwu 2006). The combination of this protracted and capricious budgeting and disbursement process with a regime prohibiting long-term contracts is an especially potent recipe for waste.

3.4. Government-NNPC Interactions

The way that money flows between NNPC and the rest of the Nigerian government is a major determinant of how the corporation is organized and functions. In the cash call payments described above, NNPC really only serves as an administrative pass-through from the government to the IOCs. The transactions that most fundamentally shape what NNPC is revolve around sales of crude oil abroad and refined products domestically. As shown in Figure 4, crude oil sales supply the majority of government revenue from the petroleum sector, with royalties and petroleum profits tax (PPT) making up the balance. The particulars of crude oil and petroleum product transactions are often highly opaque, but we here outline how they work at a high level following Gillies (2010). NNPC sells the majority of the crude oil it receives from the JVs to marketers for export, remitting the proceeds directly to the Federation of Nigeria's account in the Central Bank of Nigeria. At the same time, the corporation is allowed to "purchase" from the government a portion of crude oil at a below-market rate—this is known as the "domestic crude allocation" and is intended to be processed by the refineries to supply the domestic market. In practice, the refineries meet at best about 15% of domestic demand (EIA 2010a), so NNPC sells the majority of the domestic crude allocation for export and uses the proceeds to help cover the cost of importing refined products at international prices. However, NNPC must then sell refined products to domestic marketers for resale at highly subsidized official pump prices, which were set at ₦65 (around \$0.43) per liter as of early 2010 (Ailemen 2010). The loss NNPC takes on the refined products far outweighs its profit on the original sales of crude. The government is supposed to pay back NNPC to fill the yawning gap, but as of February 2010 NNPC claimed it was still owed ₦1.1 trillion (US\$7 billion) by the Federal Government and thus could not make good on the ₦450 billion (US\$3 billion) in crude oil proceeds it in turn is said to owe the Federation Account (Ailemen 2010).

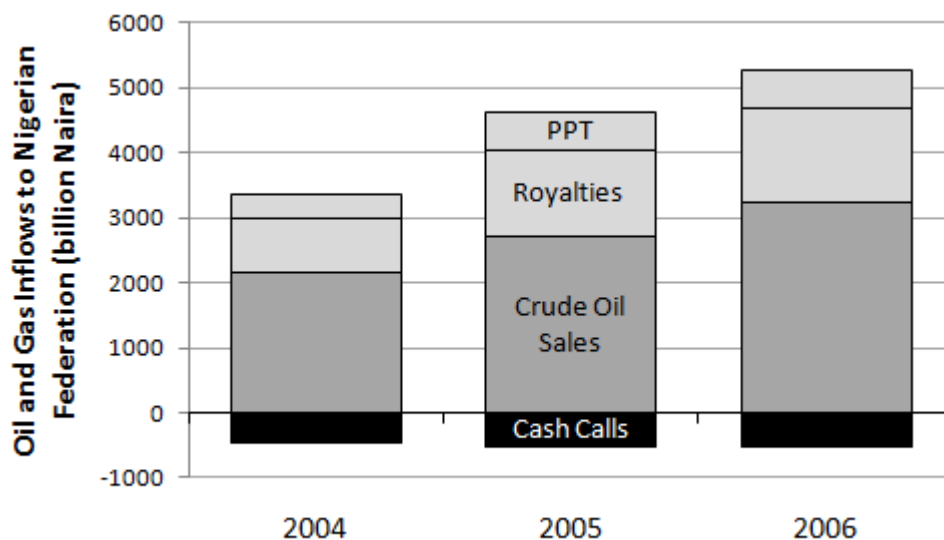


Figure 4 Amount and sources of Nigerian government oil and gas revenue 2004-2006. In 2006, total revenues were ₦5300 billion (US\$41 billion), with ₦529 billion (US\$4 billion) paid back out in cash calls to the joint venture operating companies. Data source: Federal Ministry of Finance / Budget Office of the Federation (2007).

The above interactions have a number of profound implications for NNPC and the Nigerian oil sector more generally. First, they suggest that NNPC is structurally insolvent. Crude sales are supposed to pass straight through to the Federation Account; NNPC loses money on refined product sales; other operating divisions (to be discussed later) cannot begin to generate sufficient revenue to fund the company; and there appears to be no other formal allocation to NNPC from the budget of the federal government. Any funding seemingly must come from informal allocations (or from NNPC withholding what it supposedly owes the government).

Second, this condition of perpetual corporate indebtedness helps explain and reinforce the absence of clarity around NNPC’s budgeting processes. Several former NNPC executives described a process in which the group executive directors (GEDs) of NNPC’s constituent business units would prepare budgets based on their own needs, jointly hash out an overall corporate budget along with the group managing director (GMD), and then submit the results to the NNPC board (with the president as chairman ever since Obasanjo’s administration) for approval. Beyond these basics, subsequent approval processes and precise funding sources seemed unclear and changeable. One source said that approval of the National Assembly was not required for NNPC budgets. However, another NNPC executive mentioned that the legislature had become involved in the budget approval process ever since it passed a “transparency” provision in 2007 to help the government look into the high cost of fuel subsidies

(PESD Interviews). There was also disagreement among sources as to whether NNPC budgets were really meaningful documents or merely technical exercises. Our supposition is that much of the ambiguity in budgeting processes for NNPC ultimately stems back to the NOC's basic design as a formally commercial entity that in fact can never make money.

Third, the nature of the financial flows between the government and NNPC means that NNPC has no financial autonomy from the government and thus no genuine ability to act as a business. Its formal structure as a diversified, vertically-integrated company is only a façade. A striking observation from our conversations with former NNPC executives was how little control they had over the operations of their respective units. Without any ability to reliably allocate funding from the top, GEDs may sometimes find creative solutions that allow them to pursue business goals at the margin (for example, NNPC's upstream arm NPDC was able to fund some of its operations through a partnership with Agip) but are unable to improve unit performance in a more comprehensive way.

Fourth, the same architecture of financial flows that leads to NNPC being formally insolvent provides an ideal opportunity for individuals to extract private gains. Any transaction for which there exists an official price rather than a market-determined one offers the potential for individuals to profit handsomely through arbitrage, and there are many such transactions at the nexus of crude oil sales, refining, and refined product imports and distribution in Nigeria. It is therefore hardly surprising that a disproportionate number of NNPC divisions and personnel are concentrated in these areas (see Box 1). The Crude Oil Marketing Division (COMD) is supposed to sell the government's share of crude oil on a term basis, at an official selling price (OSP) set by COMD each month, to international traders and refiners as well as to NNPC's Pipeline and Products Marketing Company (PPMC) to supply NNPC's domestic refineries. When domestic refinery output does not meet demand, which is invariably the case, PPMC can arrange import contracts to bring refined products into the country for domestic sale. Lack of transparency in COMD and PPMC procedures creates significant opportunities for corruption. On the crude oil marketing side, according to the first NEITI audit, "The choice of term buyers is taken at higher levels than COMD, implying NNPC's group managing director and the presidency. Decision making is particularly opaque at these levels." (Hart Group 2006f) Especially given pricing terms that can be favorable to buyers, being awarded a term contract for buying crude oil can be a very lucrative proposition. COMD procedures are also not up to the task of ensuring accurate physical accounting of the crude oil, which opens up another possible pathway for corruption (PESD Interviews). Analogous problems of both physical accounting and vulnerable contracting procedures⁵⁵ create corruption risks in the import of refined products (Hart Group 2006f p30).

⁵⁵ The NEITI audit cited some improvements in transparency in the tendering of import contracts, including through the introduction of a sealed tender process adjudicated by a committee representing various parts of NNPC, and the imposition of additional requirements on bidding companies including that they demonstrate a good credit rating

Capped official prices for fuel sales to consumers provide ample opportunities for corruption at the retail marketing level. (In addition to selling to marketers, NNPC operates some of its own filling stations—one such outlet is pictured on the cover of this working paper.) One characteristic dynamic, described by Ariweriokuma (2009) as having been especially pronounced in the late 1990s, is that low domestic prices drive marketers to divert products to neighboring countries,⁵⁶ create scarcity, and stimulate the development of a sizeable black market in Nigeria. Even today, fuel scarcity remains the norm, and sales to consumers often take place at prices above the official ₦65 per liter rate despite periodic government noises about enforcing price directives (Business Day 2008). Several interviewees described a process by which “privileged Nigerians” with political connections are able to obtain allocations of petroleum products from NNPC at subsidized prices, which they can then resell at market rates.

The government has moved to open up imports to a larger diversity of major and independent marketers, but Ariweriokuma (2009) notes that fewer marketers than expected have taken advantage of the policy change. This is probably not surprising given that they cannot make a profit unless they develop channels selling at above the official price. As in the markets for natural gas and electricity, no amount of deregulation, privatization, or government mandates will yield satisfactory results while low, centrally-planned prices remain in place. This fact is generally recognized by market participants including NNPC personnel with whom we spoke, but fuel price subsidies remain fiercely supported by unions and the broader public on grounds of social equity.⁵⁷ Price liberalization seems to be a third rail that is challenged by politicians at their own risk (PESD Interviews).

3.5. NNPC's Operational Units

As described above, one of the striking features of NNPC is the degree to which buying and selling of oil and refined products is emphasized over operational activities. In some cases, operational weakness may serve to directly strengthen the position of the buyers and sellers, with the area of refining being the most obvious example. NNPC's downstream subsidiaries—which include Warri Refining & Petrochemical Company (WRPC), Port Harcourt Refining Company (PHRC), and Kaduna Refining & Petrochemical Company (KRPC)—have compiled a woeful record as operators of domestic refineries. NEITI found the refinery utilization rate to be 43%, less than half of the global average of 85% during the audit period (Hart Group 2006e). Low

(Hart Group 2006a). However, the audit conceded that procedures still fall short of “good practice.” (Hart Group 2006a)

⁵⁶ Ariweriokuma described a cycle whereby some marketers would use a portion of profits from diversion of products abroad to construct new filling stations, which would in turn be used as a basis for receiving increased allocations of subsidized petroleum products from PPMC (Ariweriokuma 2009).

⁵⁷ One specious argument is that many OPEC members have much *more* subsidized fuel prices relative to Nigeria. However, fuel subsidies have significant negative effects in these places too (see, for example, the case of Venezuela), and Nigeria's oil export revenues on a per capita basis are by far the lowest of any OPEC producer (OPEC 2009).

refinery capacity creates massive profit opportunities for crude exporters who can arbitrage between NNPC's domestic crude allocation price and international prices as well as for importers who can sell refined products in Nigeria at well above the official price. NNPC personnel in a position to facilitate and participate in these transactions also stand to benefit.

Meanwhile, NNPC executives who genuinely seek to improve the operational performance of downstream units are undercut in a variety of ways. First and foremost, NNPC refining operations are not embedded in any kind of rational market framework that would allow them to develop into functioning businesses. As the chief executive of an indigenous Nigerian oil company aptly put it, "Being the MD [managing director] of a refinery [in NNPC] is no job. It's a processing unit where you don't know the price of the input or the price of the output!" Second, downstream executives have no real business autonomy due to their inability to reliably procure from the government the resources needed to run the refineries.⁵⁸ One former executive of an NNPC refining subsidiary discussed his shock upon taking the job at the complete state of neglect of the wastewater treatment system. He soon found himself stymied trying to obtain the money for the required repairs. The same executive also detailed his struggles to secure government funding to replace a broken catalyst.⁵⁹ When asked about allegations that some in government might like to keep refinery utilization factors low to protect their own lucrative import positions, the former executive responded that such allegations are "not totally false." At the same time, he said, no one ever told him not to run his refinery. In practice, though, withholding funding for ongoing maintenance has the same effect.

What makes the Nigerian refinery situation even more frustrating, as Nwokeji (2007) points out, is that massive sums of money *have* been sunk in ambitious initiatives to turn around performance, without lasting positive results. Funsho Kupolokun, NNPC's GMD at the time, reportedly testified to the Nigerian House of Representatives in January 2007 that NNPC had spent over \$1 billion on its refineries over the previous eight years (Isine and Nwankwo 2007; Daily Champion 2007). NNPC management reported in February 2010 that the latest turnaround maintenance effort has enabled the Kaduna and Warri refineries to come back on line at a capacity factor of greater than 60% (Daily Trust 2010a), although these figures are difficult to verify.⁶⁰ In any case, the real acid test will be whether the willingness to sink massive capital into refinery turn around contracts, which has never been in short supply,⁶¹ is matched with an effort to create incentives for running ongoing operations reliably.

⁵⁸ Sabotage has also played some role in disrupting refinery operations, although NEITI correctly identifies this as a less significant factor than the limited resources allocated to ongoing refinery operations.

⁵⁹ Difficulties procuring catalysts to run refining operations are legendary. A current NNPC employee described a discussion with a French delegation visiting the Warri refinery, during which the Nigerian group asked how the French engineers would feel if they had to obtain President Chirac's approval every time they wanted to purchase a new catalyst.

⁶⁰ One Nigerian observer of the oil sector with whom we spoke criticized NNPC executives for constantly overstating refinery performance figures.

⁶¹ Such contracts provide substantial opportunities for private gain.

Some argue that the refineries will never run effectively as subsidiaries of NNPC, and that selling them off would benefit both the refineries and NNPC itself (PESD Interviews). A long time NNPC employee and former group executive director in the downstream described refinery privatization initiatives that began under Babangida and have proceeded on an on-again, off-again basis ever since. An attempted sale of the Port Harcourt and Kaduna refineries to private parties on the eve of President Obasanjo's departure from office was scrapped in 2007 amid charges that that the sale was a corrupt handout to the President's cronies (This Day 2007). Several interviewees pointed to the sale of Eleme Petrochemicals to an Indonesian firm in 2006 (NNPC retained an equity stake) and its subsequent improvement as a sign that privatization can work in the downstream. However, we speculate that the Eleme sale might have succeeded in part because its purely petrochemicals-oriented business is not exposed to the profound distortions of markets for vehicle fuels.

While downstream operations have been most spectacular in their non-performance, most of NNPC's other operational subsidiaries are also largely ineffectual because of the way they confront distorted markets and/or entrenched rent seeking. In the case of the Nigerian Gas Company (NGC), NNPC's subsidiary charged with developing and operating the nation's gas handling infrastructure, the fundamental problem is electricity and natural gas pricing policy over which NGC has no control. Now that the West African Gas Pipeline appears to have come on-line in a limited capacity, NGC is indirectly participating in regional exports by transporting Nigerian gas to the pipeline. Looking forward, this has the potential to create tension between exports through the WAGP and domestic use of gas (Daily Independent 2010), particularly as long as the domestic market remains underpriced and undersupplied.

Perhaps surprisingly for a country that seems to have resigned itself to operational dependence on IOCs for the foreseeable future, NNPC's operating arm in upstream oil and gas operations, NPDC (Nigeria Petroleum Development Company), is among the more technically competent parts of the enterprise. However, in a strong contrast to countries like Norway and Brazil that have focused on developing domestic capability in the upstream, the Nigerian government has provided little support for NNPC's own exploration and production activities. As Nwokeji (2007) points out, the government in 1985 sold to IOCs all except one of the offshore blocks in which NNPC had discovered oil, re-assigned other NNPC blocks to IOCs in 1990, and transferred the Abura field to Sinopec in 2006 soon after NPDC had succeeded in boosting its output significantly. NPDC's current sole-operated production is probably no more than around 10,000 barrels per day (Nwokeji 2007), which comes mostly from marginal fields. (Including the output of a partnership between NPDC and Italy's Agip, production capacity could be as high as 60,000-80,000 barrels per day (PESD Interviews).) NPDC reports to the same executive in NNPC as NAPIMS, which as NNPC's agent in the JVs and PSCs could be viewed as NPDC's direct competitor.

Nigeria LNG (NLNG) has been successful as an operator, but this enterprise is a special case unlike any other of NNPC's operational ventures. A condition for IFC financing of Nigeria

LNG in the early 1990s was majority private ownership, so NNPC owns only 49% of the company (Shepherd and Ball 2006). As a result, government interference has not disrupted the operation in the same way that it has NNPC's majority- or wholly-owned subsidiaries. It took many years to arrive at an arrangement that could allow LNG exports to go forward in Nigeria, but once the suitable institutional framework of NLNG was finally in place, progress was relatively rapid. The importance of the Nigerian government's not having a majority stake in NLNG was demonstrated in 1997, when Nigerian energy minister Dan Etete attempted to sack the entire board of NLNG, only to realize that he was unable to do this because NNPC owned only 49% of the venture (Shepherd and Ball 2006).

NNPC's service-oriented subsidiaries are among the most promising parts of the corporation in part because they offer fairly limited opportunities for private benefit and do not have to contend with badly distorted markets.⁶² The principal services subsidiaries of NNPC are NETCO (National Engineering & Technical Company), which focuses on engineering design, and IDSL (Integrated Data Services Limited), which provides seismic data processing services. As services-focused ventures, neither of these organizations are involved with the same kinds of rent streams as are found in the rest of the industry, nor are their operations particularly capital-intensive. These attributes can potentially be a great blessing in limiting the interactions of the Nigerian government with NETCO and IDSL. Their lack of windfall profit opportunities means that NETCO and IDSL attract significantly less interest and interference from NNPC and government officials. Their relatively low funding requirements mean that they are less dependent on the government for resource support and in theory could become financially independent.

NETCO is the only division of NNPC that is significantly self-funded and perhaps even self-sufficient.⁶³ The operation started in 1988 as an NNPC joint venture with Bechtel, which sold its stake back to NNPC to make NETCO a fully owned subsidiary in 1997 (NETCO 2006).⁶⁴ NETCO's early years under Bechtel's tutelage helped to instill a strong engineering culture. NETCO contracts today come from a variety of clients including all of the significant IOCs operating in Nigeria; NLNG; major service companies like Kellogg, Brown, & Root; and NNPC itself. While NETCO certainly benefits from local content preferences in obtaining contracts, it also appears to be genuinely capable⁶⁵ and focused on further learning and

⁶² Of course, local content preferences may create some distortions in their favor.

⁶³ IDSL remains more distant than NETCO from the ideal of being an autonomous business. One observer from within NNPC (but with no affiliation with IDSL) argued that the division has the human capacity and knowledge to succeed in the same way NETCO has but has not been given the "right tools" by the corporation and the government (PESD Interviews). One obstacle is a lack of resources to procure the information technology on which it depends for seismic processing.

⁶⁴ As Nwokeji (2007) notes, NETCO took proactive steps after Bechtel departed to reassure customers who were initially wary of continuing to give contracts to a 100% indigenous Nigerian firm.

⁶⁵ NETCO staff seem proud of their status as the only NNPC subsidiary with ISO certification (PESD Interviews).

improvement.⁶⁶ Most IOC executives with whom we spoke (with one exception⁶⁷) were complimentary of NETCO's performance in the contracts it had executed for them.

4. Strategy and Performance of NNPC

Because of the diffuse and heterogeneous character of NNPC and its lack of control over its own cash flow, corporate strategy for NNPC does not exist in any conventional sense—as a set of approaches designed to most effectively accomplish centrally-determined goals. The strategy that seems implicit in NNPC's actual functioning is to continue to rely on IOCs to do the actual work of hydrocarbon extraction while NNPC functions largely as a tool for patronage.

The performance of NNPC can thus be measured both by its contribution to traditional hydrocarbon goals—maximization of existing and future production and associated revenues for government, and development of indigenous capability in oil—and by how well it delivers private goods for patronage. In fact, it is usually possible to explain the company's shortcomings in the hydrocarbon arena by looking at how the apparently dysfunctional status quo actually serves goals of patronage. Often, the performance of NNPC is powerfully shaped by institutional structures beyond its control.

4.1. Maximizing government revenue from hydrocarbons

At first glance, oil sector arrangements in Nigeria seem to do a reasonably good job of maximizing government take, at least in the narrow sense of what percentage of revenue from current oil operations flows to the government. As discussed in Section 3, the government's take across Nigeria's oil and gas portfolio is usually estimated to average 80% or higher. Government take is lower for deepwater (World Bank 2004a) and natural gas operations than it is for onshore oil in order to incentivize these activities, although there exist some pressures within the Nigerian government to roll back these incentives.⁶⁸ NNPC contributes to the high government take mainly by serving as an administrative vehicle through which the JVs and PSCs are implemented, rather than through any special skill of its own.

At the same time, there are a number of ways in which NNPC and the broader systems of which NNPC is a part significantly limit government revenue collection. First, the enormous

⁶⁶ An engineering manager at NETCO with whom we spoke was refreshingly no-nonsense in his approach to developing Nigerian capability through “learning by doing”—mandating among other things that NETCO engineers spend significant time at the sites for which they will be designing platforms and other equipment (PESD Interviews).

⁶⁷ This one IOC executive's criticism of NETCO was not that it had done a poor job as a contractor *per se*, but rather that it still had a bureaucratic mindset as opposed to being a completely commercial company (PESD Interviews).

⁶⁸ IOCs are concerned about efforts to link an increase in deepwater royalty and tax rates to the Petroleum Industry Bill before the National Assembly (Petroleum Economist 2009).

costs that NNPC bureaucracy imposes on oil operations cause the total rents available to the government to be much less than they could be. In a highly capital-intensive business like oil, approval times of over a year for even relatively minor contracts push up costs dramatically, significantly cutting into net government revenue. These costs end up being built in to the cash calls paid out by the government to JVs or the cost oil allocated to PSC operators.

Second, the delays and insufficiencies in cash calls executed through NNPC actively delay hydrocarbon developments, deferring government revenue from these projects. This problem is caused more by government funding limitations and the use of the JV arrangement than by anything NNPC does or does not do. However, NAPIMS and NNPC are deeply enmeshed in the highly bureaucratic process of allocating budgets for the JVs. They also have a say in how to distribute what money there is when the government falls short of its cash call obligations (PESD Interviews). The cash call conundrum has been avoided on new developments through the use of PSCs and will likely be worked out over time on existing projects through conversion of JVs into incorporated JVs or at the very least increased use of “alternative funding.”⁶⁹

Third, NAPIMS and NNPC are unable to adequately oversee the cost performance of the IOCs or to ensure that these companies provide good long-term stewardship of Nigeria’s resources for the country’s benefit. As a NAPIMS manager with whom we spoke freely admitted, IOC staff are better trained, better funded, and have better access to technology than their NAPIMS counterparts.⁷⁰ According to the NAPIMS manager, NAPIMS staff review IOC budgets and work programs line by line and request justifications for the technical choices made. They may disagree with a particular choice, arguing, for example, that the operator should drill a different number of wells from what was proposed. However, NAPIMS for the most part lacks the technical expertise, confidence, and backing within the company and government to impose an alternative solution.⁷¹ A more capable sector manager and regulator than NAPIMS might be able to better ensure that costs are being minimized overall and especially that they are not being disproportionately allocated by IOCs to the Nigerian government. NAPIMS staff mentioned to us some attempts to benchmark performance among IOCs, but these efforts appear to be at a very nascent stage. More generally, NAPIMS lacks any internal incentives that would reward staff for skillful regulation of the IOCs.

⁶⁹ While there remain a number of roadblocks to establishment of incorporated JVs (not least IOC concerns about being bound to the Nigerian government in uncomfortable ways), the prospects for resolving the cash call funding problems in some manner are relatively bright because the status quo has little benefit even for patronage purposes.

⁷⁰ A simple comparison of IOC and NAPIMS offices revealed the vast gulf in facilities and technology between organizations.

⁷¹ The NEITI audit diplomatically questions the ability or inclination of NAPIMS to participate as an equal partner in the decisionmaking of joint venture companies, stating that “...it is unclear whether as a co-venturer it undertakes truly independent technical assessments or economic evaluations of potential opportunities, or relies mainly on the JV/PSC Operators to provide the information that it reviews.” (Hart Group 2006d p2)

Fourth, the dreadful performance of NNPC's refineries contributes to a situation in which the corporation and the country take a massive loss subsidizing fuel. However, as we argue in section 3, refinery underperformance is arguably more an effect of subsidized fuel markets and intertwined patronage activities than the root cause of NNPC's and Nigeria's overwhelming fuel subsidy burden.

Analogously, NNPC's gas subsidiary NGC might appear superficially responsible for failing to develop the domestic gas market and the revenue that could flow from it, when the real culprit is distorted markets. Nigeria certainly leaves money on the table by failing to exploit natural gas to a greater degree than it does. In particular, non-associated gas fields are not developed by IOCs due to uncertainty about whether the investment can be recouped, according to one IOC manager whose company holds significant reserves in a non-associated gas field. However, the real root cause of this problem is not NGC but rather the absence of a liberalized gas market that would provide confidence to gas developers that gas could be sold at a reasonable price over a sustained period.

Fifth, as a central cog in the nationwide machinery of oil patronage and organized disorganization, NNPC has contributed significantly to the climate of tension and self-interest that has fueled the Niger Delta conflict. In addition to its direct human cost, the conflict has resulted in significant losses of production, which have dramatically impacted the Nigerian Federation's revenue gains from oil.

4.2. Developing Indigenous Technological Capability

Hydrocarbon-rich countries may seek to build up their technological capability in petroleum as a route to broader industrial development and economic growth, even if this means sacrificing some revenue in the short term. Norway is the most successful demonstration of this strategy in the petroleum sector,⁷² and developing countries like Trinidad & Tobago have also achieved significant results. The Nigerian government appears to share this ambition. In 2005 it set goals of achieving 45% Nigerian content in the oil and gas industry by 2006 and 70% by 2010.⁷³ In April 2010 it passed a law to make local content objectives legally binding and provide for enforcement, including through a Nigerian content development and monitoring board (Daily Trust 2010b).⁷⁴ NNPC has thus far served as the principal agent of government efforts to increase local content; it could also in theory serve as a vehicle of local content

⁷² Norwegian oil and gas consultancy INTSOK led a study that characterized progress on local content development in Nigeria and recommended ways to increase the effectiveness of capacity building efforts.

⁷³ The exact definition of local content and the approach used to quantify it have remained somewhat vague. The term can encompass in-country value addition, use of Nigerian-owned companies, employment of Nigerians, and application of Nigerian material resources.

⁷⁴ The new legislation seems to have injected significant new uncertainty into the oil sector in recent months as both foreign and indigenous companies wait to see if the law will be applied in ways that will positively or negatively affect their operations.

development through its own operational activities. As we will discuss below, NNPC has been moderately successful as a driver of private local content and for the most part a failure in developing its own capabilities.

NNPC has pushed the local content agenda through the efforts of NAPIMS as well as its Nigerian Content Division (NCD), which was established in 2005 (Nwapa 2010). The percentage of local content remains well below the 2010 target of 70%; one sector observer estimated local content to have reached 35% as of 2009 (PESD Interviews), as compared with around 5-8% in 2005 (Ariweriokuma 2009). However, most of those we interviewed felt that trends were positive and that NAPIMS and NCD deserved some of the credit for this.

One of the most nettlesome ongoing challenges is how to separate legitimate Nigerian value addition from cases that involve no more than the establishment of a Nigerian middleman. The 2005 auction of exploration blocks, which was intended to inject more transparency into the petroleum licensing process⁷⁵ (PESD Interviews; Reed 2006), illustrated this problem, as did the 2006 and 2007 follow-on bidding rounds.⁷⁶ An explicit focus on local ownership resulted in the awarding of most contracts to politically-connected Nigerian companies with relatively little experience. A significant number of these companies were then unable to pay signature bonuses, leading to speculation that they were pursuing a strategy of operator-as-arbitrageur, wherein they bid amounts they were incapable of paying under the presumption that an international company would come along and both cover the fees and add a profit for the Nigerian seller (PESD Interviews). In part to address these problems with ownership-based local content directives, NNPC has issued 22 guidelines to the industry that emphasize domiciliation—the location in Nigeria of activities that add value—rather than just indigenization of ownership (Nwapa 2010).

There are an increasing number of Nigerian companies playing meaningful roles in the oil sector, although their contribution remains small overall. Among indigenous companies, Oando PLC⁷⁷ is the most significant player, with successful ventures in the upstream, downstream, services, and gas and power segments (Vanguard 2009d; The Daily Telegraph 2010). Oando's upstream unit is production operator of two oil blocks and holds equity in a marginal field. Under a program that first awarded acreage in 2003, designated marginal fields

⁷⁵ The outcomes of previous rounds depended almost entirely on the discretion of the Nigerian executive.

⁷⁶ One series of transactions in the 2006 mini-round emphasized the continued potential for personal connections to play a role in contract awards. After DPR offered block OPL291 to India's ONGC, which declined, the license was granted to Transcorp, a local conglomerate with links to President Obasanjo. When Transcorp could not satisfy the terms of the block, OPL291 was passed to Starcrest Nigeria, an apparent shell entity that had been registered as a company the day of the mini-bid round and agreed to pay a \$55 million signature bonus. Starcrest Nigeria turned out to be owned by businessmen connected to an Obasanjo aide. Months later, Addax Petroleum bought out a majority stake in OPL291, paying the signature bonus plus an additional \$35 million to Starcrest as a finder's fee (African Energy 2006; Africa Confidential 2006). The sequence suggested that open bidding could have netted the state at least a \$90 million signature bonus, rather than \$55 million paid to the government and \$35 million paid as a windfall to private individuals with links to the President.

⁷⁷ Like NNPC's most successful unit, NETCO, Oando is partially descended from foreign firms—it was born in 1956 as a unit of Exxon, bought by the Nigerian government in 1976, and given its current name following a merger with Agip Nigeria in 2003 (Oando 2010).

with reserves too small to be of interest to IOCs are preferentially offered to Nigerian companies (Ariweriokuma 2009).⁷⁸ This program is still a work in progress, with many indigenous companies facing obstacles of both financing and expertise (PESD Interviews), but the marginal field program may help Nigerian companies develop their operational skills. A number of indigenous players (including NETCO) exist in the oil services space, although funding is also a significant challenge for these companies (Ariweiokuma 2009; PESD Interviews).

In contrast to its somewhat successful efforts to foster private local content, NNPC has been largely unsuccessful in improving its own capacities. Particularly remarkable is the degree to which upstream subsidiary NPDC has been neglected and at times actively undermined in its operational activities (see section 3). NNPC has undergone periodic capacity building initiatives at the corporate level, including the PACE (Positioning, Aligning, Creating and Enabling) program that began in 2004. This was an effort led by Accenture and Shell Manufacturing Systems (SMS) and aimed at increasing professionalism and skills within NNPC (Ariweriokuma 2009 p63; Kupolokun 2006). Several interviewees thought this program achieved some success but that the improvements were hard to maintain through the next politically-motivated purge of NNPC leadership that would inevitably come.⁷⁹ As discussed in section 3, NNPC's engineering design subsidiary NETCO has achieved some success in capacity development, in part because its functions are somewhat removed from the core concerns of NNPC.

Easy to overlook in the struggle to improve the capacity of Nigerian companies is the fact that Nigeria has developed significant indigenous talent in hydrocarbons within the IOCs themselves.⁸⁰ The great majority of IOC employees in Nigeria—one sector observer estimated 90%—are Nigerians. The fraction of Nigerians among the ranks of top in-country executives is lower but still significant. Several interviewees reported that the fraction of Nigerians employed by IOCs has been growing in recent years. Unfortunately, it has been difficult so far to translate the overall expansion in Nigerian talent into noticeable improvement in the policymaking and regulatory capability of the government, not to mention the operations of NNPC itself. Some Nigerians who gained experience as IOC executives have moved over to the Ministry of Petroleum Resources, but their ability to change the system for the better has generally been limited, in the opinion of a Nigerian journalist with whom we spoke (PESD Interviews). Development of Nigerian talent within IOCs is not an adequate substitute for the cultivation of independent Nigerian companies, including because the incentives of Nigerians within IOCs are aligned in favor of continued IOC dominance.

⁷⁸ IOCs took some convincing before they were willing to release marginal fields to Nigerian companies under this program (Ariweriokuma 2009; This Day 2003).

⁷⁹ For example, one Nigerian working in the finance sector expressed regret at the departure of NNPC GMD Funsho Kupolokun at the time the presidency passed from Obasanjo to Yar'Adua. He felt that Kupolokun had been a particularly constructive and professionalizing influence within NNPC.

⁸⁰ We thank both Alexandra Gillies and Willy Olsen for emphasizing this point.

4.3. Delivering Patronage

Many of the same factors that have made NNPC unsuccessful as a tool for maximizing revenue or developing its own capability in oil have made it ideal as an instrument of patronage. First, the complexity and bureaucracy of NNPC processes provide ample opportunity for distribution of favors, with each approval step representing a transaction that can benefit a gatekeeper or his network of associates. Contracting is the area with the most opportunity for steering benefits to one's connections. As one IOC executive described it, there is no way to entirely avoid questionable contracts when operating in Nigeria. For example, he said, oil operators depend on houseboats to house workers in the Niger Delta, and the only suitable houseboats might be owned by former government officials. As he put it, "You do business with them or you don't do business." (PESD Interviews) NNPC is right in the middle of such contract decisions.

Second, top jobs in NNPC are dispensed to politically-favored individuals. Alexandra Gillies cites the implicit rotation of NNPC Board Members, often on a regional basis in line with the regional structure of Nigeria's patronage network (see section 2). The GMD of NNPC changes with each presidential transition, and sometimes more frequently, making it difficult to effect sustained positive change within the organization.⁸¹ Employment at the NNPC staff level is also facilitated by connections, although overall employment rolls within the company appear to be less padded than they once were; according to Nwokeji (2007), NNPC staff size shrank from 17,000 in 2003 to around 9,000 as of the beginning of 2007.

Third, as highlighted by Gillies (2009), the allocation through NNPC of "lifting" licenses for exporting crude oil and importing refined products is opaque and highly discretionary. As discussed at length in section 3, the gap between market prices and subsidized official prices for both crude oil and refined products creates enormous profit opportunities for holders of these licenses. Business Day (2008) alleged that NNPC officials in collaboration with politicians distribute such licenses both for individual gain and to buy support of politicians in the legislature, who in turn use the proceeds for patronage among their home constituencies.

Beyond the ways in which it actively serves patronage goals, NNPC's lack of financial autonomy ensures that the corporation cannot become a self-sufficient actor in the oil sector that could threaten existing constituencies which benefit from the status quo. In a similar way, the sparse resources allotted to regulatory agencies prevent these bodies from developing capability and exercising real oversight. Actors that benefit from the status quo only need to perpetuate the disorder that allows them to find profitable niches, while reformers face the much more difficult challenge of building a new order that eliminates such dark corners.

⁸¹ Often these changeovers are accompanied by promises of a full investigation of NNPC's past dealings.

5. Conclusion: Prospects for Reform

Nigeria's dysfunctional equilibrium in the oil sector will be difficult to dislodge. Our study of NNPC sheds light on how corruption, bureaucracy, and non-market pricing regimes for oil sales reinforce each other – a lesson that is applicable well beyond Nigeria's borders. Bureaucracy facilitates patronage and corruption by multiplying the number of transactions that are required to accomplish anything, with each transaction creating an approver who can extract personal gain. Non-market pricing generates profitable opportunities to arbitrage between controlled and free or black markets, with public officials able to dispense access to these opportunities as a means of patronage. Implementation of controlled pricing regimes is inevitably byzantine and bureaucratic and becomes more so as ad hoc policies are put in place to try to manage the inevitable distortions like fuel shortages. Moreover, an entity like NNPC that operates within a fundamentally non-market framework has little choice but to retreat to bureaucratic behavior, as autonomous commercial operations are not possible. Finally, sustained patronage as has existed in Nigeria creates many entrenched interests that resist moves towards price liberalization and commercialization, which would expose and eliminate their shadowy niches. The few relative success stories within NNPC, like its engineering design subsidiary NETCO, are somewhat removed from the massive capital flows that would make them appealing prey for patronage.

Reforms embodied in the Petroleum Industry Bill (PIB) that was introduced in the National Assembly in 2009 attempt to fix many surface problems in the Nigerian oil sector, but legislation alone is unlikely to be able to address these core dynamics. To address NNPC's lack of financial autonomy and consequent inability to run as a commercial enterprise, the bill intends to turn it into a limited liability corporation, NNPC Ltd., which would control and reinvest its own revenue. NNPC Ltd. would continue to partner with IOCs, but existing partnerships would be formalized into incorporated joint ventures (IJVs)—presumably allowing them to be freer of bureaucratic encumbrances and raise money independently rather than depending on the capricious cash calls. In an effort to correct Nigeria's lack of capable and independent policymaking and regulatory authority in oil, the bill would create two new bodies, the National Petroleum Directorate (NPD) and the Nigerian Petroleum Inspectorate (NPI). The NPD and NPI would for the most part assume the duties of MPR and DPR, respectively, but with more autonomy, due in part to independent revenue generation capability. The current tension between NNPC's role as sector manager and quasi-regulator of IOCs and its (as yet largely theoretical) role as an operational player in the sector would be resolved through the creation of the National Petroleum Assets Management Agency (NAPAMA). NAPAMA would take over the current functions of NAPIMS as approver of IOC investments and contracts, leaving NNPC free to be more of an actual oil company.

The proposed reforms attempt to fix the problems of the Nigerian oil sector by mimicking the institutional design of a model sector that functions well. The model aspired to seems to be

that of Norway. NNPC Ltd. maps to Norway's NOC, commercially-oriented Statoil. Nigeria's National Petroleum Directorate would set policy in the same way as Norway's Ministry of Petroleum and Energy. The Nigerian Petroleum Inspectorate would be a quasi-autonomous regulator in the mold of the Norwegian Petroleum Directorate. And finally, NAPAMA would play a role analogous to that of state-owned company Petoro in Norway, which has the responsibility of managing the state's direct financial interests in oil and gas assets.

Unfortunately, declaring that new oil institutions exist and will function in a fundamentally different way from current institutions does not make it so. The failed history of previous oil reform efforts in Nigeria, which for the most part merely shifted organizational functions on paper, urges caution. So too does the recent history of electricity reform in Nigeria, which exhibits disconcerting parallels to the current path of oil reform. Formal privatization of Nigeria's profoundly dysfunctional state power company was accomplished in 2005 with the passage of the Electric Power Sector Reform Bill by the National Assembly (Vanguard 2006), almost four years after a draft bill was first presented to the legislature (This Day 2004). The idea was that the Power Holding Company of Nigeria (PHCN) would be unbundled into 18 successor companies (11 distribution companies, 6 generation companies, and one transmission company), and that these companies would be bought by private commercial entities which would then improve the nation's electricity generation and delivery (Daily Champion 2005; Vanguard 2009c). In practice, no investors showed interest in the unbundled companies because the unchanged electricity tariff structure would have precluded any profit. (Leadership 2008b).

As in the electricity reform case, the current oil and gas reforms address apparent causes of sectoral problems—a weak regulator, an NOC that does not function like a true corporate entity—that are in fact manifestations of deeper root causes. The oil regulator is weak because it is to the advantage of powerful interests for it to be so. The implicit rotation of government power among regional and ethnic interests, as described in section 2, means that even groups not currently in power anticipate their turn and want to make sure they are not encumbered by a strong oil sector regulator when their chance to govern arrives.⁸² NNPC does not run as a financially autonomous business in part because the current broken system, under which the corporation is nominally commercial but in practice structurally indebted to the government, offers the possibility for many politically-connected interests to benefit. Giving NNPC genuine control over its revenue would entail taking this control away from others, and the bill does not even begin to discuss how to do this (Heller 2009).⁸³

By simultaneously confronting so many parties with an interest in preserving the status quo, a comprehensive bill like the PIB is likely to consolidate opposition. For example, IOCs might be attracted to certain aspects of the bill, such as measures that try to reduce NNPC bureaucracy, internal conflict, and control over funding. At the same time, they are passionately

⁸² We are grateful to Alexandra Gillies for highlighting this point.

⁸³ A further concern, if one were actually able to give NNPC control over its revenue, would be how to avoid simply creating a new money grab from within NNPC.

opposed to provisions in the bill to increase royalty and tax rates on deepwater production, which they say will make such projects uneconomic (Petroleum Economist 2009). The excessive sweep of the bill may result in its failure to pass, or, as in the power sector case, the eventual passage after a long delay of a set of “Potemkin” reforms that alter relationships on paper while having only a limited impact on real problems. (Given the high profile of the PIB, we suspect this latter outcome is more likely than outright non-passage.)

As appealing as it may seem to try to fix the Nigerian petroleum sector in one fell swoop, the likelihood is that real positive change will require more incremental effort over a long period of time. Based on the observations of this study, we suggest four principal areas for focus. First, transparency initiatives like NEITI should be supported and continued. The biggest worry on the transparency front is how deep the political commitment to the process really is. In the absence of President Obasanjo, who was the strongest political force behind NEITI, the process seems to have slowed down. The most critical missing piece of transparency efforts so far has been any concerted effort to throw a spotlight on the opaque workings of NNPC, including the awarding of export and import licenses and the flows of funds both within NNPC and to and from the government. Unfortunately, this is also likely to be the area where transparency efforts will meet the most entrenched resistance from those who benefit from opacity.

Second, Nigeria needs to further develop indigenous private companies that can play a productive role in the oil industry. Local content targets have had some real positive effect, but the problem remains that shell companies with connections can vault ahead of genuine productive enterprises in contracting processes. A pre-qualification process for local firms might help, as would greater transparency in the awarding of oil industry sub-contracts. Local enterprises also face substantial hurdles in finding funding. Nigeria’s new local content law inspires both hope that it can help bring capacity building to another level and fear that it might be exploited as yet another means for “privileged Nigerians” to benefit without adding value to the country’s economy. The effort to foster Nigerian enterprises is certainly worthwhile. To the extent that more domestic companies grow and develop as legitimate players in the industry, they can start to provide an alternative route to Nigerian involvement and wealth creation in the oil sector that is less dependent on milking government bureaucracy. Ultimately, such players could help form a constituency for genuine reform.

Third, markets must be fixed through some degree of price rationalization, and NNPC and its business units should be made more commercial and less bureaucratic. The sequencing of these two steps is critical and extremely thorny. As numerous past initiatives in Nigeria have shown, formal privatization in the absence of market reform is likely to fail. Time and again, the government has courted private investment in the provision of energy services—for example, in electricity supply, refinery operation, and import of refined products—but failed to arouse the expected interest because markets were too distorted to allow real commercial operation. Where markets are reasonably unencumbered, on the other hand, Nigerian industries have proven attractive to private investors, as demonstrated by the sale of Eleme Petrochemicals to Indorama.

Reforming Nigeria's energy pricing is both the most important and the most challenging step towards increasing NNPC's commercial orientation, enabling the country to more fully develop its own hydrocarbon resources and capabilities, and finally establishing reliable energy services for Nigerians. One reform strategy that has had success in other developing country contexts is to build up new markets in parallel to established ones in which entrenched interests block reform. Natural gas markets might be a reasonable starting point for price reform in Nigeria, as their underdevelopment means that there are fewer players that benefit from the status quo than in, for example, the vehicle fuel market. The state electricity company is an unreliable customer for gas that itself operates in a non-functional market, but industrial and commercial consumers—who experience massive dissatisfaction with the current dysfunctional system—might be able to form a base for further development of the domestic gas market. As an illustrative example, India's domestic market for natural gas is heavily distorted by subsidies for fertilizer production and electricity generation, but the government satisfied significant unserved demand when it made imported LNG available to industrial consumers at international prices (Jackson et al 2007). Nigeria could start increasing domestic gas utilization through a similar approach of multi-tiered pricing in which certain applications see higher prices and could thus be supplied profitably, albeit in this case from domestic rather than international gas. Indeed, the Gas Master Plan appears to suggest just such a multi-tiered pricing policy, with prices for industrial and commercial consumers driven by those of competing fuels rather than an arbitrary official price (Adefulu 2009). Some industries might choose to develop their own captive, gas-fired power to sidestep broken electricity markets. However, pricing reforms will do little to develop the gas market if the government cannot find a way to make pricing promises credible to potential investors.⁸⁴

Vehicle fuel subsidies are most integrally connected to NNPC's dysfunctions and also excruciatingly difficult to unravel. On the one hand, any attempt to increase prices unleashes howls of protest from a Nigerian populace that sees the subsidy as one of the only things the government provides them of any value. Politicians conclude with some justification that price reform is political suicide. On the other hand, efforts to gain public trust by increasing transparency in the shady transactions around petroleum exports, imports, and marketing are likely to be thwarted by the private interests that benefit richly from them. Nonetheless, tenacious efforts at reform from both ends could help. Genuine improvement in transparency over time might help convince a skeptical public to go along with needed reforms in other areas including pricing.

⁸⁴ The problem of credible commitment is illustrated by a new gas pricing policy introduced in 2010 that would increase natural gas prices from their current \$0.20/mmbtu to \$1/mmbtu by the end of 2010 and \$2/mmbtu by the end of 2013 in an effort to spur investment in domestic gas infrastructure (Alike and Ezeigbo 2010). However, the report quotes Minister of Petroleum Resources Deziani Alison-Madueke as saying that “each price change is triggered only when the gas sector has demonstrated that it has developed sufficient gas to attain a particular threshold of electricity generation.” The caveat could be taken to signal the lack of a credible commitment by the government to the new pricing scheme and thus actually deter potential gas developers from making the large investments needed to bring online new gas aimed at the domestic market.

The fundamental difficulty is that the ailments of Nigeria's energy sector (and broader political system) are all connected. This is one argument of reformers who argue that nothing short of a comprehensive reform will bring sustainable change. However, our own observation is that overly ambitious statutory or executive-led reforms are easily rejected or subverted by Nigeria's resilient ecosystem of patronage. Somehow the basic conditions within which oil activities take place need to shift over time. Patronage transactions, central planning, and bureaucracy need to be gradually replaced by durable and competent public institutions, genuine markets, and productive indigenous enterprises that add value rather than milking government connections. Incremental improvements in each area could over time begin to reinforce each other in a virtuous cycle. The creation of isolated functioning markets, for example in sales of gas to domestic industry, could allow productive Nigerian businesses to develop. Nigerian businesses in turn could start to demand fairer and more transparent treatment from public institutions. Higher-quality institutions could better regulate the oil sector, and so on.

Nigeria has a deep pool of latent talent and entrepreneurial energy. Unfortunately, in the absence of a basic institutional framework that supports productive activity, much of the country's human potential goes untapped or is directed only towards getting ahead in the patronage-based system. Progress would be helped along by the emergence of wise and selfless political leadership that focuses to a greater degree on the long-term good of the country. Unfortunately, the short time horizons created by Nigeria's stage-managed rotation of power make such leadership both rare and difficult to sustain.

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PESD Interviews

Much of this study is based on a set of research interviews conducted in January 2007 (by P. Heller) and September 2008 (by M. Thurber and I. Emelife). A number of interviews were also conducted by phone during the period from 2007 through 2010. In total, more than 40 people with knowledge of different aspects of the Nigerian petroleum sector were canvassed. The sample included people who worked (currently or formerly) at different levels for several divisions of NNPC, Nigerian government agencies, private Nigerian oil companies, international oil companies and oil services companies operating in Nigeria, private Nigerian businesses (including in finance), aid agencies of foreign governments, international NGOs, Nigerian NGOs, and Nigerian workers' unions. We also spoke with several journalists and academics.

Because of the sensitivity of the topics discussed, a large number of those with whom we spoke preferred not to be identified by name. Therefore, in lieu of an interviewee list, we have attempted in the text to identify the general background of the source of particular assertions where useful.

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