REFORMING NATIONAL OIL COMPANIES: **NINE RECOMMENDATIONS**

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Executive Summary

Some national oil companies (NOCs) have contributed heavily to successful efforts to harness benefits from the oil sector and drive broader national development. In other cases, however, NOCs have become inefficient managers of national resources, obstacles to private investment, drains on public coffers, or sources of patronage and corruption. As such, NOC reform—incremental in some cases, fundamental in others—lies at or near the top of the policy agendas of many oil-rich countries.

Building on existing literature, we surveyed 12 NOCs from diverse geographical and operational contexts to distill practical steps that policy-makers can take to make their countries' NOCs more effective and more accountable—to governments and to citizens. Our research resulted in the following nine recommendations for NOC reform:

	Recommendation	Core features
Defining and financing a commercial mandate	1. Carefully define commercial and non-commercial roles. Limit non-commercial activities where sophisticated or expensive commercial activities heighten the risk and cost of conflicts of interest.	• Define a clear commercial strategy, and adhere to it. • Clearly define what the NOC will not do, and enforce consistently. • Limit regulatory role at stage where NOC aspires to true competitiveness.
	2. Develop a workable revenue retention model.	• Navigate competing pressures: NOC needs access to sufficient revenue flows to cover costs, but where NOC has too much control over state finances, it risks becoming a parallel state. • Other things equal, the higher the NOC's investment needs, the higher the justification for it to have autonomy over revenue flows. • Other things equal, the higher the share of overall public revenues passing through the NOC, the lower the justification for it to have autonomy over revenue flows.
	3. Procure external financing by listing some NOC shares on public stock exchanges or issuing external debt where appropriate.	• Take advantage of capital-raising and corporate governance impacts of markets.
Limiting political interference in technical decisions	4. Define clear structures and roles for state shareholders.	• Limit the number of government shareholders to promote coherent management.
	5. Empower professional, independent boards.	• Make appointments according to well-defined, meritocratic processes. • Emphasize technical expertise rather than political patronage.
	6. Invest in NOC staff integrity and capacity.	• Adopt strong employee accountability provisions. • Promote training and merit-based promotion. • Restrict conflict of interest. • Encourage learning orientation throughout company.
Ensuring transparency and oversight	7. Maximize public reporting of key data.	• Disclose revenues, costs, revenue flow between NOC and the state, production, plans, results of oil trading and quasi-fiscal activities.
	8. Secure independent financial audits, and publish them.	• Commission audits by skilled independent professionals, and make results available to citizens.
	9. Choose an effective level of legislative oversight.	• Ensure responsibility of NOC and its officials to answer to the legislature without unduly constraining decision-making.

Introduction

The management of national oil companies (NOCs) has a major impact on how well oil producing countries translate potential wealth into sustainable development that benefits citizens. An effective NOC can generate strong financial returns to the state, a flourishing of national technical capacity, and strong environmental and social commitments. Mismanaged NOCs, by contrast, often exacerbate waste and corruption and deprive the country of valuable resources. Extensive research on the performance and political economy of NOCs has resulted in rich debates on reform priorities.[1]

This brief builds on the existing literature—including the Natural Resource Charter and the 2013 Resource Governance Index—and a comparative analysis of the 12 NOCs listed in Table 1 to provide practical tips to help policy-makers improve NOCs' economic performance and accountability. The cases include a variety of NOCs from different regions of the world, at different levels of technical sophistication and with different roles—some are exclusively traditional commercial entities, others play a principally regulatory/oversight role, and some do all of the above. Our assessment of companies' performance along the two dimensions noted in Table 1 is designed to facilitate the extraction of critical lessons for global practice, and not as a specific tool for policy reform within the countries surveyed or an indicator that one company in the sample should be viewed as being more or less sophisticated than another. (See box, next page.)

Table 1. National oil companies case study

Country	Company	Achievement of government technical/economic goals	Resource Governance Index (RGI) assessment of public accountability mechanisms
AFRICA			
Angola	Sonangol	High	Partial
Cameroon	Societé Nationale des Hydrocarbures (SNH)	Low	Failing
Ghana	Ghana National Petroleum Corporation (GNPC)	Moderate	Failing[2]
Nigeria	Nigerian National Petroleum Corporation (NNPC)	Low	Weak
ASIA-PACIFIC			
Malaysia	Petroliam Nasional Blvd. (Petronas)	High	Partial[3]
Vietnam	Petrovietnam (PVN)	Moderate	Failing
EUROPE AND EURASIA			
Kazakhstan	KazMunaiGas (KMG)	Moderate	Satisfactory
Norway	Statoil	High	Satisfactory
LATIN AMERICA			
Brazil	Petróleo Brasileiro (Petrobras)	High	Satisfactory
Mexico	Petróleos Mexicanos (Pemex)	Low	Satisfactory
MIDDLE EAST			
Iran	National Iranian Oil Co. (NIOC)	Low	Failing
Saudi Arabia	Saudi Aramco	High	Weak

Our review of the experiences of these companies complements existing research on NOC performance and enables us to recommend nine steps that policy-makers, NOC officials and independent analysts within oil-producing countries should pursue to increase the performance and accountability of their NOCs. Given that there is no single model of NOC success, no one prescription can serve as a complete determinant of performance, but we have tried to be as practical as possible in providing guidance on steps that have aided the development of the successful companies in our sample.

Methodology for NOC case studies

Our assessment of technical/economic performance is a qualitative measure of the degree to which an NOC has accomplished the specific goals set out for it by its government principals. It seeks to be reflective of the diversity of goals, functions and levels of sophistication of the companies in the sample. It is based on a detailed questionnaire adapted from Victor et al (2012), Thurber et al (2011) and Heller and Marcel (2012), and incorporates an analysis of the performance of any responsibilities assigned to the NOC with respect to: promotion/execution of efficient exploration; promotion/execution of efficient production; channeling of a "fair share" of revenues to the state; management of stable agreements with private partners; and effective monitoring of operators and revenue collection.[4]

Note that a high score for the achievement of government technical/economic goals does not necessarily indicate that an NOC is a sophisticated commercial player; no one would argue, for example, that GNPC is a more skilled operating company than Pemex. Rather, our assessment is based on a sort of sliding scale in line with the responsibilities set out for it. GNPC has been reasonably successful at helping Ghana get through the early stage to first production, thus we rate it as a mid-level achiever of government goals. Pemex, by contrast, in its pre-reform posture was unable to arrest a decline in production or generate sufficient investment, prompting a fundamental constitutional reform of Mexico's oil sector. So, following Stojanovski (2012) and Thurber et al, we give it a lower score.[5] The assessments are based on historical performance and do not analyze the impact of reforms currently underway, such as GNPC's announced transformation from a quasi-regulatory agency to a player with large commercial ambitions, or the implementation of Mexico's 2013 constitutional reforms.

With one exception,[6] our notation of public accountability is taken from each company's score on the 2013 Resource Governance Index, which measures policy and performance on transparency and accountability in 58 resource-rich countries based on peer-reviewed surveys of publicly available information. Our categorization is based on the company's score on a 100-point scale of accountability, comprising satisfactory (71 – 100), partial (51 – 70), weak (41 – 50) and failing (0 – 40). Note that this designation principally reflects information disclosure and does not fully capture the sort of intra-governmental accountability mechanisms discussed in several of the recommendations that follow.

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1 See, e.g., Silvana Tordo, Brandon S. Tracy, and Noora Arfaa, *National Oil Companies and Value Creation* (Washington, D.C.: World Bank Working Paper no. 218, 2009); Valérie Marcel, *Oil Titans: National Oil Companies in the Middle East* (Washington, D.C.: Brookings Institution Press, 2006); Paul Stevens, "National oil companies and international oil companies in the Middle East: Under the shadow of government and the resource nationalism cycle," *Journal of World Energy Law & Business* 1(1) (2008): 5-30; and Christian Wolf, "Does ownership matter? The performance and efficiency of State Oil vs. Private Oil (1987–2006)," Energy Policy 37.7 (2009): 2642-52.

2 GNPC was not assessed on the 2013 Resource Governance Index; the ranking for Ghana in that document reflects the country's mining sector rather than oil. The assessment for GNPC here is based on a survey that replicates the methodology used to assign scores in the Index, according to which the company would have scored a 20 out of a possible 100.

3 As with the other companies in the sample, the score assigned to Petronas here is from the survey conducted in the 2013 Resource Governance Index. It is worth noting, however, that Petronas has in recent years been lauded for putting in place a no-gifts policy for all staff, creating a position of chief integrity officer and launching a code of business ethics. In the wake of the puclication of the Index, Petronas implemented several reforms to its public reporting regime to improve its transparency, which may result in an improved ranking in the next version of the Resource Governance Index. See Eugene Thean Hock Lee, *Scope for Improvement: Malaysia's Oil and Gas Sector*, Kuala Lumpur: Research for Social Advancement (REFSA), 2013), http://refsa.org/wp/wp-content/uploads/2013/07/OG-Scoping-Report-Malaysia-final-20130701.pdf

4 David G. Victor, David R. Hults and Mark C. Thurber, "Introduction and Overview," *Oil and Governance: State-Owned Enterprises and the World Energy Supply* (Cambridge, U.K.: Cambridge University Press, 2012), 3–31; Mark C. Thurber, David R. Hults and Patrick R.P. Heller, "Exporting the 'Norwegian Model': The effect of administrative design on oil sector performance," *Energy Policy* 29 (2011): 5366-5378; and Patrick R. P. Heller and Valerie Marcel, *Institutional Design in Low-Capacity Oil Hotspots* (New York: Revenue Watch Institute, 2012), http://www.revenuewatch.org/publications/institutional-design-low-capacity-oil-hotspots.

5 Ognen Stojanovski, "Handcuffed: An Assessment of Pemex's Performance and Strategy," *Oil and Governance*, 280 - 333; Mark C. Thurber, David R. Hults and Patrick R.P. Heller, "Exporting the 'Norwegian Model': The effect of administrative design on oil sector performance," *Energy Policy* 29 (2011): 5366-5378.

6 GNPC; see footnote 6 for explanation.

Defining and financing a commercial mandate (Recommendations 1, 2 and 3)

Virtually every NOC has a formal mandate to be a "commercial" entity, but what exactly the "commercial" role entails is sometimes ill-defined. High-performing NOCs have defined this mandate precisely and strategically. Most well-established oil producing states want traditionally commercialized companies that prioritize maximizing profits and controlling costs. The companies that have achieved this goal possess clear commercial mandates and develop the structures, autonomy and incentives needed to carry out those mandates. NOCs unable or unwilling to commercialize often face limitations: vaguely-defined company roles, lack of access to capital required for reinvestment, and a weak regulatory environment with higher risks of patronage and corruption.

In some countries, particularly where oil reserves are small or the industry is in its infancy, it may not be advisable to immediately prioritize a traditionally commercial NOC that aspires to principal responsibility for managing exploration and production activities.[7] But even within this category of countries, governments that have carefully structured NOC responsibilities vis-à-vis commercial, quasi-commercial and non-commercial activities have generated the best results; by defining what the company and other institutions can and cannot do, and setting a clear strategic path for the NOC, an emerging producer increases its chances of managing the oil sector effectively and accountably.

Once the company's commercial strategy is in place, it is important that the company has sufficient access to financial resources to execute it effectively. This can be particularly challenging where the NOC aspires to costly operational activities. When an NOC is responsible for a substantial share of project costs, it often faces heavy upfront capital expenditures, for projects that may take anywhere from seven to fifteen years to generate revenues.[8] These companies need reliable access to funds to allow them to pursue forward-looking strategies.

At the same time, particularly in states where a major share of government revenue passes through the NOC, leaving the company with too much autonomy over its revenues can have grave consequences for public financial management.[9] In Angola, where Sonangol has had de facto authority to retain control of huge revenue flows, the IMF uncovered an "unexplained residual" in state accounts initially measured at more than $31 billion between 2007 and 2010 (equivalent to one fourth of annual GDP) that had not been managed via ordinary rules of public financial management. A reconciliation of these discrepancies revealed that a large proportion of these expenditures were attributable to quasi-fiscal activities by Sonangol and the transfer of oil revenues "to external accounts to service external credit lines."[10]

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7 For a thorough discussion of the challenges facing new oil producers, see Heller and Marcel.

8 Several NOCs, including Pemex, Statoil, Petrobras, Petronas and Venezuela's PDVSA, pay a large share of these capital costs upfront during exploration and development. It is more common, however, for NOCs, particularly smaller ones, to have significant costs "carried" through these stages, meaning they do not pay upfront but must reimburse costs to their private partners out of eventual revenues or profits. Even in these countries, a large ownership stake for the NOC can have significant impacts on future revenue streams and therefore the national economic impact of the oil sector.

9 The risks are somewhat reduced in countries that enjoy low oil revenue dependence, such as Norway.

10 International Monetary Fund, *Angola: Second Post-Program Monitoring: Press Release and Statement by the Executive Director for Angola*, IMF Country Report No. 14/81, March 2014, http://www.imf.org/external/pubs/ft/scr/2014/cr1481.pdf.

RECOMMENDATION 1

Carefully define commercial and noncommercial roles. Limit noncommercial activities where sophisticated or expensive commercial activities heighten the risk and cost of conflict of interest.

As is recommended in Precept 6 of the Natural Resource Charter, it is critical that the government of an oil-producing country clearly define the state company's commercial strategy and any non-commercial responsibilities. The "commercial" role of an NOC refers to its participation as a business player in revenue-generating activities. Delineating exactly what is contained within a particular NOC's commercial role is an often-overlooked step; the broad contours of the role should be set by the company's shareholders and other executive branch officials responsible for the company's oversight. The details of the role should be developed by the company itself. Companies like Saudi Aramco, Petrobras, Petronas and Statoil engage in the range of activities associated with large international oil companies, including managing and financing complex exploration and production activities. Some of these "operating" NOCs even run projects overseas, where they largely resemble private international oil companies.[11]

Other companies have a much more limited range of commercial activities, including minority equity shareholdings with varying degrees of financial obligation and varying histories of serious commitment to participating in operating group decisions (e.g., SNH, GNPC), sales of the government's share of oil on international markets, and downstream activities in the domestic market.

In countries with successful histories of NOC management, the government and the NOC have determined exactly what is contained in the NOC's commercial mandate, and the company has carefully articulated business strategies to pursue that mandate. Part of this challenge involves deciding whether to take on a major operating role. Where an NOC does aspire to play a major technical role in executing projects, it is critical to choose a strategic focus and build capabilities over time.

The managers of Petrobras, for example, made a core strategic decision when they recognized that the company could develop a long-term comparative advantage in developing deepwater operating capabilities. Petrobras invested heavily in building this capacity as a core feature of its commercial development, at a time when foreign oil companies were excluded from the Brazilian upstream.[12]

In Malaysia, Petronas managers made a decision to develop the company's capabilities abroad, focusing particularly on markets that were seen as risky by other companies.[13]

Nigeria's NNPC, by contrast, has floundered in part because it has never developed a coherent set of commercial priorities—the company spends a lot of money as a participant in joint ventures and the overseer of woefully unsuccessful refineries, but lacks a strategy or a mandate for a path to a profitable portfolio.

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[11] See, e.g., Pauline Jones Luong and Fiorella Jazmin Sierra, "Crude Ambitions: The Internationalization of Emerging Country NOCs," University of Michigan Working Paper, 2014.

[12] See Adilson de Oliveira, "Brazil's Petrobras: strategy and performance," in David G. Victor, David Hults and Mark C. Thurber (eds.), *Oil and Governance*, 527-535. Brazil's oil sector was opened to foreign competition in 1997.

[13] Leslie Lopez, "Petronas: reconciling tensions between company and state," in David G. Victor, David Hults and Mark C. Thurber (eds.), *Oil and Governance*, 816-821.

Beyond the need to unpack the company's "commercial" mandate, it is important to appropriately define and contain non-commercial roles. NOCs are frequently called upon to perform two principal types of non-commercial roles:

- *Regulatory roles*, which we define, building on Boschek (2007) and Tordo (2011), as including licensing of exploration and production rights; setting detailed rules governing performance; ensuring compliance by companies (and by other government agencies) with legislation, regulation and contracts; and approving key decisions by partner companies regarding exploration and production.[14]
- *Quasi-fiscal roles*, which we define as including activities carried out by the NOC that would typically be ascribed to other agencies of the state as part of its fiscal management, public expenditure or national development responsibilities, rather than being connected to the upstream oil sector directly. Examples include servicing national debt, building or maintaining infrastructure, promoting public health and education, providing consumer fuel subsidies, and purchasing arms.

Table 2 shows the incidence of these two types of non-commercial roles in our sample NOCs.

Table 2. Non-commercial roles and achievement of government technical/economic goals[15]

Company achievement of government technical/economic goals	Company	Company plays regulatory role?	Company plays quasi-fiscal role?
High	Petronas	–	✓
	Petrobras	✓	✓
	Saudi Aramco	–	✓
	Sonangol	✓	✓
	Statoil	–	–
Moderate	GNPC	✓	✓
	KMG	–	✓
	PetroVietnam	–	✓
Low	NIOC	✓	✓
	NNPC	✓	✓
	Pemex	–	✓
	SNH	–	✓

[14] See Ralf Boscheck, "The Governance of Oil Supply: An Institutional Perspective on NOC Control and the Questions It Poses," *International Journal of Energy Sector Management* 1 (2007) 366-389; Silvana Tordo, *National Oil Companies and Value Creation* (Washington: World Bank, 2011).

[15] Regulatory activities refer to the NOC's role in soliciting contract tenders, awarding bids and in some cases enforcing resource companies' compliance with petroleum-related laws. Social development refers to NOCs taking responsibility for managing or funding health, environmental management, education or other social programs. Quasi-fiscal activities include significant outlays by the NOCs for fuel subsidies, large-scale public works projects, national debt servicing or other financial tasks that would typically be undertaken by the state itself. As noted above, the table here reflects historical roles and does not, for example, reflect recent changes removing regulatory powers from NOCs in places such as Ghana and Mexico. Note that the categorization made here that a particular NOC exercises regulatory responsibility reflects both *de jure* and *de fact*o practice. In Nigeria, for example, the Department of Petroleum Resources is the formal regulator, but NNPC executes large amounts of de facto regulatory power, primarily through its subsidiary National Petroleum Investment Management Services (NAPIMS). As noted above, the table here reflects historical roles and does not, for example, reflect recent changes removing regulatory powers from NOCs in places such as Ghana and Mexico.

Some analysts have suggested that eliminating non-commercial roles altogether is a precondition for a successful and accountable NOC.[16] As Table 2 illustrates, the reality in our sample countries is more complex, and research has shown that an overly rigid limitation is not always advisable or achievable, especially when institutions face serious political and capacity hurdles.[17] With respect to quasi-fiscal activities, it is noteworthy that Statoil is the only company in our sample that refrains from them altogether. As custodians of large pools of resources and technical capacity, NOCs are often well-placed to perform these roles. The key to success appears to be to avoid assumptions of roles that are too expansive or are poorly defined, which can steer resources away from focused commercial development and impede performance.[18] Mexico's Pemex, for example, has long directed a program called Donativos y Donaciones ("gifts and donations"), which aims to promote social development by delivering small-scale infrastructure, in-kind goods and cash transfers. The state has not clearly defined Pemex's role in the program, and administering its many facets has distracted attention from operations. This sort of concern about the role that Pemex has played in a range of quasi-fiscal activities was one motivation behind the constitutional reform enacted in Mexico in 2013, which will open Mexico to private competition in the oil sector and seeks to remove many of Pemex's non-commercial responsibilities. The scope of quasi-fiscal activities assigned to Venezuela's PDVSA grew to absurd proportions under the rule of Hugo Chavez; in 2012, the company's filings with the U.S. Securities and Exchange Commission revealed that it spent more on its "social programs" ($4.35 billion)—including literacy and health promotion—than it did on its oil-sector operations ($2.99 billion).[19]

With respect to regulatory responsibilities, the companies in our sample that achieve the highest marks on the Resource Governance Index—all of them moderately to highly commercially sophisticated—have not been tasked with engaging in regulation. This finding corresponds with the argument that saddling an NOC with responsibility for monitoring the sector at the same time as investing in and executing sophisticated projects can impede transparency and accountability. Endowing NOCs with large non-commercial powers can also lead the companies to take advantage of their positions to advance the company's business interests, which may not always be fully consistent with those of the country. And in some cases, allowing the NOC to regulate the allocation of exploration and production rights can open the door for corruption. Operating companies seeking to secure lucrative contracts and licenses may engage in the bribery and extortion of NOC officials, particularly when the NOC is staffed with political appointees, as is the case in Iran and Nigeria.[20]

But three of the eight top technical/economic performers in our sample—Petronas, Sonangol and GNPC—have traditionally engaged in some form of industry regulation, as did Petrobras during the period during which the Brazilian oil sector took off.[21] These companies have succeeded in part because they have not let their regulatory activities muddy their strategic focus; they have set and pursued their own commercial goals; and they have maintained strong, consistent funding for development of capacity.

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[16] This is a common refrain in technical assistance projects carried out by international donor agencies in many new oil producers. For a written perspective on the value of this "Norwegian" system of strict separation of powers, see Farouk al-Kasim, *Managing Petroleum Resources: The Norwegian Model in a Broad Perspective* (Oxford: Oxford Institute for Energy Studies, 2006).

[17] See Mark Thurber, David Hults and Patrick Heller, "Exporting the 'Norwegian Model': The effect of administrative design on oil sector performance," *Energy Policy* (June 2011).

[18] See Glada Lahn, Valérie Marcel, John Mitchell, Keith Myers and Paul Stevens, *Report on Good Governance of the National Petroleum Sector* (London: Chatham House, 2007).

[19] "PDVSA: Social Spending Outstrips Investments," *Latin American Herald Tribune*, accessed March 4, 2014 at http://laht.com/article.asp?CategoryId=10717&ArticleId=200037.

[20] George R. G. Clarke, "What Do Managers Mean When They Say 'Firms Like Theirs' Pay Bribes?" *International Journal of Economics and Finance* 4(10) (2012):161-69; Paasha Mahdavi, "Extortion in the Oil States: How Nationalization Increases Corruption," UCLA Manuscript (2014).

[21] Petrobras performed a large number of regulatory duties until the creation of an independent regulator in 1997.

Some NOCs need significant time to improve their skill sets and bankability before they are ready for strong commercial mandates. Confining such companies to an initially limited range of profit-seeking activities, coupled with some regulatory duties, can help them commercialize successfully over a period of years through encouraging specialization and capacity development. For decades, the Angolan government and Sonangol itself consciously limited the company's commercial role to selling oil and promoting local content. Officials emphasized Sonangol's quasi-regulatory role as the company honed its skills, then pushed it deeper into commercial ventures—principally through Sonangol's exploration and production subsidiary—as the company developed sufficient expertise. This phased approach to defining the company's role has driven Sonangol to economic success, though the Angolan NOC remains characterized by serious shortcomings in public accountability.

The likelihood and consequences of conflicts of interest associated with an NOC regulatory role tend to arise where the NOC's commercial role includes major investments and/or a major part in the operation of upstream activities. That is why countries like Brazil, Indonesia, Colombia and India have assigned regulatory responsibilities to an NOC during an initial period of development, then divested the companies of such responsibilities at a more mature phase when they aspire to greater commercial success and the government fears increasing performance costs stemming from conflict of interest.

Limits on NOCs' non-commercial activities can be set in law, either in great detail or in more general terms subject to later directives which should be precise and transparent. For partially privatized NOCs, listing activities in a shareholder's agreement or articles of incorporation might sometimes be more appropriate.

RECOMMENDATION 2

Develop a workable revenue retention model.

An NOC's ability to execute its chosen commercial strategy is heavily influenced by the extent to which it can retain earnings from its activities, and the manner in which it transfers money to the treasury and/or receives budgetary allocations *from* the treasury. Appendix 1 describes the revenue retention models in our 12 case study countries. The NOCs in our sample that do not have predictable access to sufficient revenue flows to consistently cover their operational costs—NNPC, Pemex and Petronas—lose significant profits as a result. Petronas, which has in recent years paid dividends to the state of up to 74 percent of net income,[22] has charged that its production capacity is challenged by ever-higher transfers of profits.[23] At the same time, as illustrated by the Sonangol example above and by the experiences of countries like Azerbaijan and Congo-Brazzaville, where NOC exports represent more than 80 percent of government revenues, too much autonomy can have grave consequences for the national budget.[24]

Hence, there is no universal model appropriate for all countries. But officials should give careful consideration to the revenue retention system that best suits their governments' goals and capacities. A weighing of where they stand vis-à-vis the two factors featured in Figure 1 can help guide the system.

Figure 1. Determinants of NOC revenue retention

Operational sophistication/ commercial investment needs	Share of total government revenues coming from NOC activities: Low	Share of total government revenues coming from NOC activities: High
High	I. Highest justification for significant NOC revenue retention (e.g., Norway)	II. High justification for significant NOC revenue retention, but checks and balances are of heightened importance (e.g., Malaysia)
Low	III. Reduced justification for significant NOC revenue retention (e.g., Ghana, especially before production began)	IV. Lowest justification for significant NOC revenue retention (e.g., Congo-Brazzaville)

Quadrant I represents countries in which the NOC is a sophisticated commercial entity with a need for large-scale investment to finance activities, and in which the company's revenues do not dominate the public budget. These countries present the strongest case for a model in which the NOC is able to retain its revenues and pay taxes, much like a private entity. Quadrant II is in the middle ground, where the company faces heavy operational costs and where a lack of predictable access to capital can be crippling,

[22] Petronas Annual Report, 2012, 36, http://www.petronas.com.my/investor-relations/Pages/annual-report.aspx.

[23] Leslie Lopez, "Petronas: reconciling tensions between company and state," in David G. Victor, David Hults and Mark C. Thurber (eds.), *Oil and Governance*, 834; Niluski Koswanage and Emily Kaiser, "Special Report: Petronas chafes at its role as Malaysia's piggy bank," Reuters, July 2, 2012, http://www.reuters.com/article/2012/07/02/us-malaysia-petronas-idUSBRE86105420120702.

[24] Alexandra Gillies, *The Case for Transparency in National Oil Company Crude Sales* (New York: Revenue Watch Institute, 2012), www.revenuewatch.org/sites/default/files/OilSales-Transparency.pdf.

but also where the government needs to take special care to ensure the integrity of public revenues and the coherence of the budget. Countries in quadrant III, where the risks of total disruption to the economy may not be large but where the company's needs for capital are not huge either, should consider a model where revenue retention is relatively limited. Finally, quadrant IV represents countries where the company is not a traditional commercial player—and thus its capital needs are relatively small and/or predictable—and where simultaneously a large share of public revenues pass through the company, subjecting the country to massive risks if the company budget becomes the de facto national budget. In these countries, there may be little to no justification for substantial revenue retention.

Another factor to be considered in the setting of the revenue retention model is the efficiency of the national budget process. In a situation where the company does not retain significant revenues, the use of the budget process to finance NOC operations is not inherently problematic. But where budgeting is overly slow, unpredictable or political, total reliance by the NOC on budget allocations can be crippling. Iran's NIOC, for example, receives state funds for gas reinjections into its aging onshore fields and retains earnings from crude sales of equity shares in its buyback contracts. Transfers of these funds have not been reliable, and budget allocations to NIOC within Iran's five-year development plans have been volatile.[25]

[25] See Central Bank of the Islamic Republic of Iran's *2009-10 Annual Review* (Tehran: Islamic Republic of Iran Public Relations Department).

RECOMMENDATION 3

Procure external financing by listing NOC shares on public stock exchanges or issuing external debt where appropriate.

If managed well, public listings can enforce market discipline and accountability by creating strong incentives for NOCs to demonstrate to potential investors that their commercial prospects are good, their decision-making is sound, and their accounting is clear and comprehensive. Of the 45 state-owned enterprises ranked in the Resource Governance Index, the seven with listed shares had an average accountability score of 80, compared to an average of 46 for the enterprises that remained fully government-owned. Within our case studies, public listing has encouraged innovation and efficiency in the following cases:

Petrobras

Brazil partially privatized Petrobras in 1997, selling shares abroad (notably on the New York Stock Exchange).[26] Proceeds from the sales then went back into the sector, principally in offshore drilling and exploration. At the same time, the state established a regulatory body, the National Petroleum Agency, to take over many of the non-commercial responsibilities previously held by Petrobras.

This exercise served Petrobras's stated goal of increasing revenues in three ways. First and most obviously, the share sales raised cash up front. Second, compliance with stringent U.S. stock exchange reporting requirements incentivized better, more efficient management, which in turn reassured investors when Petrobras went out to raise capital. Third, the share sale helped reduce fuel subsidy costs, which were ballooning Brazil's public debt and inflation. By creating new and binding obligations to maximize Petrobras' profits for shareholders, Brazil's government created a fresh argument against entrenched interests around subsidies. Phase-outs were then conducted gradually to reduce political fallout, with price controls on products with smaller market shares (e.g., jet fuel, lubricants and kerosene) reduced ahead of changes to the big gasoline and diesel subsidies.[27] Within a period of years, Petrobras' production levels, proven reserves and revenues increased substantially, and the company has further enhanced its skills and reputation as a world leader in deepwater exploration and production.[28] (Note that there has been a reversal in the trend toward Petrobras's commercial independence during the years following the discovery of the massive pre-salt fields offshore, which is discussed below.)

Statoil

The Norwegian government partially privatized Statoil in 2001 through listings on the Oslo and New York stock exchanges, retaining 67 percent of shares for itself. The state also established a new non-operating company, Petoro, to manage its direct financial stakes in oil and gas, which are held in a financial portfolio known as the State's Direct Financial Interest (SDFI).[29] The partial privatization of Statoil was driven by a desire to generate capital to finance an expansion program and to become a world-class global oil company. The reform was ultimately successful: Since 2001, Statoil has showed a marked increase in investment and income, and its share prices have more than doubled in Oslo and more than quadrupled in New York.

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[26] The state currently holds 64 percent of common shares, with voting rights at the company's shareholder meetings, and 48 percent of Petrobras's preferred shares, which do not carry voting rights.

[27] See Adilson de Oliveira and Tara Laan, *Lessons Learned from Brazil's Experience with Fossil-Fuel Subsidies and their Reform* (Geneva: International Institute for Sustainable Development, 2010), http://www.iisd.org/pdf/2010/lessons_brazil_fuel_subsidies.pdf. Brazil has since reintroduced subsidies, which have imposed significant costs on Petrobras, though they are far lower than pre-2001 levels.

[28] Agency data indicates that Petrobras currently produces 1.9 million barrels per day, up an average of 10.4 percent per year since 1997. Proven reserves in the same period doubled from 7.1 billion barrels to 14.2 billion barrels. Government revenues from exploration and production have climbed steadily from $0.3 billion in 1998 to more than $9 billion in 2007. See Adilson de Oliveira, "Brazil's Petrobras: Strategy and Performance," in David G. Victor, David Hults and Mark C. Thurber (eds.), *Oil and Governance*, 544.

[29] The SDFI interests in oil and gas projects are separate from Statoil's equity shares in those projects.

KazMunaiGas

In 2006 Kazakhstan listed an upstream subsidiary of its NOC, known as KazMunaiGas E&P (KMG E&P), on the Kazakhstan and London stock exchanges. Driving factors included a desire to expose KMG E&P to market pressures, a wider trend of privatizing Kazakh state-owned enterprises, and the need to raise funds for future asset purchases—including 50 percent of KasGerMunai and a one-third interest in PetroKazakhstan.[30] The KMG E&P IPO raised more than $2 billion. The strictures of U.K. and Kazakh reporting rules also improved accounting and reporting standards for KMG E&P and its parent. While significant, the impact of this listing on the parent company should not be overstated, however. The parent company KazMunaiGas still faces several governance challenges affecting its commercial performance.[31] And the assets held by KMG E&P do not include many of the most important rights held by the parent company KazMunaiGas, such as its shares in Kazakhstan's largest oil fields or privileged position to acquire exploration and production rights within the country.

Of course, not all NOCs are in a position to list shares. The feasibility of doing so and attracting investor capital depends on several factors, including the burdens the company faces in terms of carrying non-core assets and engaging in non-commercial activities. A plan to build toward a listing over time can be a vehicle for tightening asset management and corporate governance.

In addition to those that have sold equity on stock exchanges, four of the NOCs surveyed—Pemex, Petrobras, Petronas and Statoil—are able to bonds in the international financial market. All of the four except Pemex are top performers on our measure of technical and economic performance. Qatar Petroleum and various Chinese NOCs have also held successful bond sales. Bond sales grant NOCs more flexibility for expansion and working capital purposes. Petronas in particular used sales of 10-year bonds in 2002 and 2009 to finance much of its capital expenditure on exploration and production over the decade. The requirements associated with issuing international bonds can also have positive effects on a company's corporate governance.

[30] Martha Brill Olcott, Kazmunaigaz: Kazakhstan's *National Oil and Gas Company* (Houston: James A. Baker III Institute for Public Policy of Rice University, 2007), http://bakerinstitute.org/media/files/page/9820ee52/noc_kaz_olcott.pdf.

[31] In particular, KMG faces challenges in meeting its capital commitments to the giant Kashagan project. Anthony Lobo and Valérie Marcel, *The National Oil Company Investment Challenge* (KPMG, 2010).

Limiting Political Interference in Technical Decisions (Recommendations 4, 5 and 6)

In the highest performing NOCs in our survey, professional, independent management and boards, not politicians, make key business decisions. This allows for predictable planning, supports the exercise of sound business judgment, and reduces the risk of capture by narrow political interests.

All NOCs, even successful ones, are subject to some state interference. Petronas is highly beholden to the prime minister, whose power is subject to relatively few checks and balances. During the administration of Lula da Silva (2003-2010), Petrobras was subject to government pressure at the board level for expenditure in non-core areas. Political intervention on the company has continued to increase in recent years. The government has mandated that Petrobras will be the operator of all blocs in the offshore pre-salt areas, and will maintain a minimum 30 percent equity stake in those blocs. And the company has once again been called upon to subsidize fuels on a massive scale, which has been estimated to have cost Petrobras tens of billions of dollars.[32]

That said, political interference in technical decisions is heaviest among the lowest-performing NOCs. Companies such as NIOC and SNH are subject to state interference in profit reinvestment, financing decisions and corporate governance. For example, in 2005 the Iranian executive, under President Ahmadinejad's so-called "purge of the oil mafia," substantially revamped NIOC's organizational structure, replacing ministers, managing directors and even mid-level bureaucrats.[33] Despite requirements for legislative approval of such actions, political interference in NIOC went largely unchecked because of weak de facto constraints on the executive. What ultimately seems to separate the high performers is greater autonomy in making commercial decisions and formulating operational strategy.

This is not to suggest that the technical decision-makers on NOC boards and management should simply be trusted on faith to benevolently and effectively execute state strategy. Rather, this analysis reflects a view on the timing and the most effective tools for oversight. Previous research by Hults (2012) has found that ex post mechanisms whereby a broad range of political actors have an opportunity to review NOC actions and performance—with NOC leaders facing meaningful consequences for poor results—have proven to be more effective tools for strong performance and accountability than an overly inclusive *ex ante* decision-making structure or one requiring a surplus of approvals before activities can be carried forward.[34] Prescriptions 4 through 6 emphasize steps that can limit interference in *ex ante* decisions, while 7 through 9, further below, lay out some effective *ex post* mechanisms for control.

RECOMMENDATION 4

Define clear structures and roles for state shareholders.

NOCs in which a strong, single state shareholder makes big-picture strategic decisions (but leaves day-to-day management to the NOC) have generally performed better than those where state shareholding is diffused among many government entities. Examples of the former model include Malaysia, where the prime minister's office is the sole shareholder in Petronas, and is responsible for collecting annual dividends and taxes from it.[35] In Saudi Arabia, the monarch exercises shareholder powers through the SCPMA council, which oversees the petroleum ministry. This gives the king power over major

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[32] Samantha Pearson and Joe Leahy, "Petrobras: Unfulfilled Potential," *Financial Times*, October 17, 2013.

[33] Paasha Mahdavi, "Oil, monarchy, revolution, and theocracy: a study on the National Iranian Oil Company," in David G. Victor, David Hults and Mark C. Thurber (eds.), *Oil and Governance.*

[34] David Hults, "Hybrid Governance: State Management of National Oil Companies," in David G. Victor, David Hults and Mark C. Thurber (eds.), *Oil and Governance*, 62 – 120.

[35] The act can be found at http://www.agc.gov.my/Akta/Vol.%203/Act%20144.pdf.

policy decisions, including OPEC action, production volumes and spare capacity levels.[36] And in Kazakhstan, the state wealth fund holds all shares in the parent company KazMunaiGas but exercises limited oversight of operations. The clear, unified direction of this model has enabled the company to make coherent strategic decisions on the commercial activities associated with its participation in oil operating groups and on strategic decisions like the decision to convert KMG E&P to semi-private ownership.

By contrast, splitting state shareholding across different agencies without clearly defining the roles of each shareholder has impeded technical and economic performance. In the case of Iran, the government owns 100 percent of NIOC, yet voting rights for the NOC are shared across the legislative and executive branches, the unelected upper tier of government, and various regulatory agencies. Before Mexico's recent constitutional reforms Pemex was similarly shared out, with the president and the legislature competing for decision-making power. Dividing roles and powers theoretically creates useful checks and balances. But without a clear definition of roles, division of operational decision-making risks paralyzing the NOC operationally and politicizing reform.

RECOMMENDATION 5

Empower professional, independent boards.

Effective technical leadership from boards of directors has proven to be one of the keys to technical performance and accountability. The boards of most high-performing NOCs have competent, politically autonomous members who are appointed through transparent and well-defined processes. Among the methods employed for board selection in our sample are:

- Appointment by the executive (nine of 12 NOCs surveyed)
- Appointment by the executive, with legislative confirmation (e.g., NIOC and Petrobras)
- Appointment by independent election committee and NOC employees (Statoil)
- Splitting appointment powers between government and private shareholders (Petrobras[37])

Board members should be chosen based on their technical expertise rather than patronage concerns. Appointments from outside the NOC can help capture the right skill sets. Petronas, for example, appoints six of the 13 members of its board from leading resource, legal and consulting companies. Aramco's board comprises a mix of NOC staff and three international experts from international oil companies and other international institutions.

Finally, while appointing ministers to NOC boards is common (found in 5 of the 12 NOCs surveyed), doing so can impede effective decision-making, as ministers often are driven by pressing political concerns that distract from the technical priorities necessary to manage the development and implementation of company strategy.[38] Past comparative research also suggests that new NOCs facing serious political and capacity hurdles perform better when decision-making authority is concentrated within the NOC itself, rather than in the hands of other administrative figures such as ministers. At the same time, of course, too much concentration of power can leave the NOC unaccountable.[39]

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[36] Valérie Marcel, *Oil Titans: National Oil Companies in the Middle East and North Africa* (London: Chatham House, 2006).

[37] The government appoints the majority of board members of Petrobras, while private shareholders nominate a minority of members.

[38] See Lahn et al. for more detail on good governance relating to NOC boards.

[39] Heller and Marcel.

RECOMMENDATION 6

Invest in NOC staff integrity and capacity.

Improving the competence and incentives of staff can also safeguard against narrow, politicized decision-making. Executive appointments to Petronas follow the Malaysian Code on Corporate Governance, which codifies best practices and principles of good governance and sets out mandatory training requirements for directors of private and state-owned Malaysian enterprises.[40] Companies including Statoil, Petrobras, Saudi Aramco and Sonangol invested heavily in developing a cadre of skilled professionals from the earliest days of their development, recognizing that one of the most important steps to building effective and accountable companies was making sure they were managed by world-class experts. For example, Saudi Aramco prides itself on a rigorous training program to develop some of the region's top engineers and oil managers, to the point that being an "Aramcan" is among the most prestigious jobs in the kingdom.[41] Beyond hiring and training, it is important for the NOC to develop and enforce meritocratic systems for internal promotion and performance incentives, to ensure that performance, rather than a desire to benefit from patronage, is the principal motivator of staff behavior. Finally, rules against conflicts of interest among high-level managers (and board members) represent an important step to ensure that the company is being managed according to long term national and commercial goals, as opposed to narrow self-interest.

[40] The code can be found at http://www.mia.org.my/new/downloads/circularsandresources/circulars/2012/21/MCCG_2012.pdf. For more details, see Michael Yeoh and Farizal Hj. Mohd. Razalli, "Reinventing corporate governance in corporate Malaysia: the challenges ahead," in S.H. Saw and K. Kesavapany (eds.), *Malaysia: Recent Trends and Challenges* (PLACE: Institute of Southeast Asian Studies Press, 2006).

[41] Paul Stevens, "Saudi Aramco: The jewel in the crown," in David Victor, Mark Thurber, and David Hults (eds.), *Oil and Governance*, 193.

Ensuring Transparency and Effective Oversight (Recommendations 7, 8 and 9)

In many countries NOCs rank among the most opaque and unaccountable state institutions. This is reflected in the Resource Governance Index (RGI), wherein 33 of 45 state-owned enterprises were assessed to have unsatisfactory practices. As is illustrated by the Resource Governance Index and explained by the Natural Resource Charter, this can have severe impacts on public governance—when citizens, investors and even other public institutions lack basic knowledge of what these companies are doing and how they are making decisions, the likelihood of management in the long-term public interest decreases significantly. Without strong mechanisms to hold company decision-makers to account, incentives for efficiency and innovation are weak. It is no coincidence that the companies in our sample that rank among the weakest in both technical/economic performance *and* accountability (NIOC, NNPC and SNH) exhibit significant shortcomings in disclosing information to the public.[42] By contrast, several NOCs surveyed in the Resource Governance Index, including Petrobras and Statoil, have shown that high degrees of transparency contribute meaningfully to strong economic performance.

There has been substantial attention in recent years to the Extractive Industries Transparency Initiative (EITI) and other global transparency standards, and even some of the weakest performers, including NNPC and SNH, are formal participants. But nominal adherence to these standards is not a substitute for far-reaching implementation of meaningful information disclosure, though the new EITI standard released in 2013 should result in major improvements, as is discussed below.

RECOMMENDATION 7

Maximize public reporting of key data.

Public disclosure of key data on company finances and activities in a consistent and timely fashion is critical. As the Natural Resource Charter states, "The national company should face at least the same standards of disclosure that private companies do." Relevant information for publication includes:

- *Revenues collected by the NOC* from its participation in exploration and production activities or any regulatory role, including revenue from oil sales; royalties; fees; taxes collected by the NOC; and dividends received from partnerships
- *A detailed accounting of the fiscal relationship between the NOC and the state*, including the rules governing fiscal transfers and disclosure of payments by the NOC to the treasury or other state institutions; earnings retained by the company; and budgetary allocations from the state to the company
- *Assets held by the company in subsidiaries and joint ventures*; the level of NOC ownership in these entities; revenues earned and retained by subsidiaries and joint ventures; and transfers between the parent company and the subsidiaries and joint ventures
- *Expenditures by the company on quasi-fiscal activities*, as defined above
- *Company debts* at a disaggregated level, including those owed to the state (where applicable)
- *A description of major activities in exploration and production*, including past activities, progress against goals, and projections of forward-looking activities; and activities associated with NOC participation in joint ventures or production sharing agreements

[42] In many cases this mirrors challenges of internal information sharing and awareness. It is often said in the case of NNPC that even top executives within the company may not have full knowledge of how funds are flowing. In such instances a strategy for clear preparation and presentation of information can have internal as well as public impacts.

- *The company budget*, including past budget performance and forward-looking budgets
- *Detailed reporting on oil sales* executed by the NOC, including buyers, volumes, types of crude and sale price [43]
- *Corporate structure*, including composition of board and senior management (including dates of appointment), as well as structure, personnel and responsibilities of key divisions

Of the six NOCs in our sample that keep major portions of such information secret—GNPC, NIOC, NNPC, PetroVietnam, Saudi Aramco and SNH—only Saudi Aramco is high performing from a technical/economic standpoint (it has taken advantage of the country's massive oil endowment, a to skilled personnel, and unified management and has built an effective operation without transparency, though it should be noted that despite its poor public accountability, Aramco maintains strong reporting practices with the state.)[44]

During the 1990s Pemex, Petrobras, Petronas and SNH all adopted more transparent reporting practices. In many cases, this improved transparency has significantly boosted the financial performance of NOCs, both by incentivizing better management practices and attracting external investment. Increased financial openness—specifically through publishing data on capital expenditure, net operating income, earnings, debts and assets—helped Petronas boost investor confidence for more than $19 billion in bond issues between 1993 and 2010.[45] The bonds, in turn, helped finance major long-term performance improvements.

It should be noted that public reporting is not the sole contributor to technical and economic success. Despite its transparent reporting practices, Pemex is perceived as a poor technical performer, while Saudi Aramco—perhaps the most opaque NOC in this study's sample—is one of the best performers. Though some companies achieve technical success in spite of weak public reporting, opacity almost always has damaging effects on public accountability and the long-term impact of the oil sector on citizens' lives. Sonangol, for example, has generated large revenues with very weak public reporting, contributing to weak public management, large-scale accounting discrepancies, and poor translation of success in oil to advances in development.

The new standard adopted by EITI in 2013 provides a strong basis for the improvement of NOC accountability in EITI-implementing countries. It requires governments to publish information on the in-kind oil sales managed by NOCs, as well as the companies' transfers to and from the treasury; the overall revenues earned by the company; and the contours of any quasi-fiscal expenditure by the company on things like infrastructure, subsidies, and debt relief.[46] Vigorous implementation of this standard in EITI countries can contribute to significant steps toward more comprehensive transparency.

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[43] For a more detailed discussion of the importance of oil sales transparency, see Gillies (2012).

[44] It is worth noting that other Gulf NOCs such as Qatar Petroleum and ADNOC, with access to world-class petroleum reserves and high levels of petroleum per capita, have also achieved high levels of technical success in spite of opaque reporting structures.

[45] Lopez, 2012.

[46] Extractive Industries Transparency Initiative, *The EITI Standard* (2013), http://eiti.org/files/English_EITI%20 STANDARD_11July_0.pdf.

RECOMMENDATION 8

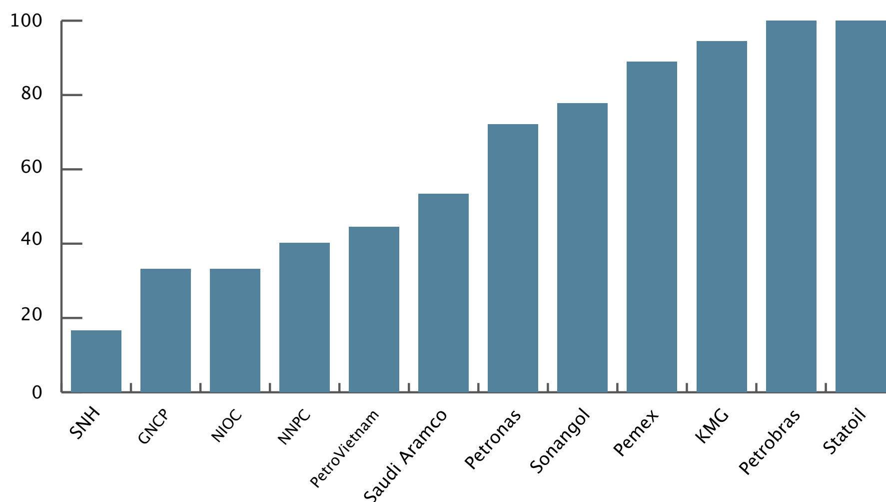
Secure independent financial audits, and publish them.

All 12 NOCs surveyed submit to some sort of audit. Three of the 12—NIOC, GNPC and Petronas—were subjected only to state auditors, while the other 9 utilized independent audits. Best practices here include:

- Having external, independent firms conduct audits (nine out of 12)[47]
- Publishing audit reports (of the nine externally audited firms, all but NNPC, PetroVietnam and Aramco)
- Hiring auditors through open tenders (all but NNPC)
- Changing auditors periodically (a statutory requirement for Pemex every four-to-five years, which to some extent has boosted investor confidence for bond issues)

As is regularly demonstrated in the private sector, rigorous accounting standards that include independent audits are one of the most powerful tools creating incentives for strong performance and corporate governance, as well as accountability to shareholders. Figure 2 illustrates the degree to which extensive, systematic and transparent audits have figured into the strategies of the many of the most commercialized and effective NOCs in our sample. It shows each company's average score on six audit-related questions of the Resource Governance Index, measuring: the conduct of NOC audits by an independent auditor; the publication of these audits; the adherence of the company to international accounting standards; the coverage of the audits vis-à-vis subsidiary companies; and two questions measuring the country's broader commitment to external verification of financial transfers associated with oil production.[48]

Figure 2. Average RGI audit score, by company



[47] Sonangol's statements are audited by an external audit organization, but audits are not "signed" by the auditor, meaning that the audit agency cannot confirm that the information provided was up to international standards. This is also the case for PetroVietnam's externally audited financial reports.

[48] The six RGI questions referred to in this passage are, in the order in which they are presented here: 43(a), 43(b), 45, 46, 29 and 30. For GNPC, the score reflects an average of the scores obtained only on questions 43(a), 43(b), 45 and 46, as the survey conducted for this paper did not include the sector-wide analysis for the oil sector necessary to answer questions 29 and 30.

RECOMMENDATION 9

Choose an effective level of legislative oversight.

Under the right circumstances, parliaments can be an effective vehicle for effective *ex post* control of NOC activities. As stewards of the fiscal balance and annual appropriations processes, it is important for legislators to have a clear understanding of the impact of NOC activities on the revenue envelope available for the budget. Requirements that the NOC submit annual reports (including audited financial statements) to parliaments and submit to hearings on their performance can serve as an important source of information for the legislature and scrutiny for the company. Under Norway's Petroleum Act, for example, Statoil must report to the legislature on projects with significant economic and social impacts, or costs exceeding $840 million.

Legislators should also take seriously their key role in policy-making, including via legislation that establishes major strategies for the petroleum sector, defines the roles of the NOC and other institutional actors, and sets reporting requirements.

Legislatures can also intervene *ex ante* in the operations and financial decisions of many of the NOCs surveyed, including with parliamentary approval of contracts and licenses and approval of NOC budgets on an annual or multi-annual basis, in connection with the revenue retention model as discussed in Recommendation 2.[49] As noted above, there is a trade-off in terms of efficiency associated with giving the legislature a strong role in *ex ante* NOC decision-making, which can seriously impede the execution of an effective commercial strategy.

The degree of capacity and professionalism of a country's legislature has a major impact on the effects of parliamentary control on NOC management. Where parliaments are managed by skilled and committed leaders who are well-versed on oil-sector governance—and where these bodies have access to the information needed to carry out their responsibilities—they can be major sources of improved accountability. Where they are weak, corrupt, or self-interested, parliaments can exacerbate the challenges discussed throughout this paper.

[49] In Norway and Saudi Arabia there is no parliamentary approval of the NOC budgets, consistent with those countries' revenue retention models. Both Sonangol and Petronas share budgets with their legislatures, but budgetary approval is not legally required. The Malaysian legislative approval process is subject to veto by the executive. See Lopez and Patrick Heller, "Angola's Sonangol: Dexterous right hand of the state," in David G. Victor, David Hults and Mark C. Thurber (eds.), *Oil and Governance*, 836 – 884. Saudi Aramco does not give its budgets to the Shura Council; only the executive reviews the company's budgets. See Valérie Marcel, *Oil Titans: National Oil Companies in the Middle East and North Africa.*

Appendix

Revenue Retention Models

Country	Revenue retention system	Notes
Lowest NOC autonomy over revenues		
Cameroon	Company transfers revenues in excess of costs to government.	Accounting of what constitutes proper SNH “costs” has posed challenges, and government agencies have sought advance payments directly from SNH.
Iran*	NIOC retains cost recovery from oil revenues, and transfers the rest (plus profit oil from “buyback” service contracts) to government.	Government uses NIOC as tool for distribution of social benefits and employment (more pronounced during the Ahmadinejad era, 2005–2012); some retained revenues are diverted to these objectives by the government.
Nigeria	NNPC does not retain revenue; it passes through the company to the state.	NNPC often lacks funds to pay its share of costs, which is a result of weak financial controls and administrative processes.
Moderate NOC autonomy over revenues		
Ghana	GNPC pays revenues into petroleum fund, but can retain “equity financing cost” and additional amount as approved by parliament (not to exceed 55 percent of net cash flow from government interests).	During first year of production, 46 percent of all collected petroleum revenues stayed with GNPC.
Malaysia*	Petronas retains profits on earnings and transfers dividends, royalties, export duties to the state; it also pays heavy taxes on its own profits.	Some Malaysian analysts have argued that burden on Petronas is excessive; dividend payout ratio between 2008 and 2012 ranged from 38 to 74 percent, with other fiscal payments on top.[50]
Mexico (pre-reform)*	Pemex retained revenues and paid income taxes (official rule) or share of gross revenues (frequent practice).	Pemex was constitutionally the only operator in Mexico; this will change per reforms enacted at the end of 2013.
Vietnam	PetroVietnam retains a set percentage of various revenue flows (e.g., 50 percent of dividends and royalties) and pays the rest to the state.	PetroVietnam operates primarily through joint ventures.
Highest NOC autonomy over revenues		
Angola	Formal rule has been for Sonangol to transfer revenues to treasury with minimal retention, but in practice Sonangol has retained massive amounts of revenue with little formal constraint. Sonangol retains massive amounts of revenue, without constraint.	Angola and IMF have announced plan to hold Sonangol more firmly to account. As of 2013 Budget Law, rule calls for the company will be able to retain 7 percent of revenues and transfer rest to Treasury.[51]
Brazil*	Highly-commercialized, partially privatized NOC retains revenues and pays taxes/dividends to state.	From 1997 to 2010, Petrobras acted as an almost purely commercial body. State pressure to provide subsidies has returned in recent years, at high cost.
Norway*	Statoil retains revenues, pays income taxes and dividends to the state.	Statoil acts as almost purely commercial body.
Saudi Arabia*	Saudi Aramco retains revenue to cover its costs, then pays royalties and dividends equivalent to 93 percent of its profits.[52]	Saudi Aramco operates with a corporatized structure, with little evidence of heavy scrutiny of costs by the state.

* NOC is operator of a large share of country’s oil production

[50] Petronas Annual Reports, 2012 (p. 39) and 2010 (p. 12), http://www.petronas.com.my/investor-relations/Pages/annual-report.aspx.

[51] International Monetary Fund, *Angola: Second Post-Program Monitoring: Press Release and Statement by the Executive Director for Angola*, IMF Country Report No. 14/81, March 2014, http://www.imf.org/external/pubs/ft/scr/2014/cr1481.pdf.

[52] Paul Stevens, “Saudi Aramco: The jewel in the crown,” in David G. Victor, David Hults and Mark C. Thurber (eds.), *Oil and Governance*, 193.

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