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**NATIONAL OIL COMPANIES IN THE MIDDLE EAST
AND NORTH AFRICA: REMAINING RELEVANT
IN A CHANGING WORLD**

Jenik Radon and Sarah Logan

Working Paper No. 1072

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Abstract

This paper applies a practitioner's analytical perspective to assessing the contractual arrangements governing oil and natural gas development in oil-producing countries in the Middle East and North African, drawing on international experience for a comparative approach. It also looks at factors influencing the efficiency and competitiveness of national oil companies in these countries, key aspects of the relationship between international oil companies and these governments, and management issues vis-à-vis governments and their national oil companies, such as competitive neutrality. It finds that the type of contractual arrangement used influences the extent to which the needs and interests of host countries are advanced, and that applying political constraints and non-commercial mandates to national oil companies diminish their competitiveness. Finally, it finds that national oil companies that diversify the nature and geographical scope of their activities have a stronger likelihood of remaining relevant in today's changing oil and gas industry.

JEL Classification: K2; K3

Keywords: Oil and natural gas; hydrocarbons; national oil companies; state-owned enterprises; Middle East and North Africa; international oil companies; concessions; royalty tax systems; joint ventures; production sharing contracts; service agreements; transparency; accountability

ملخص

تطبق هذه الورقة منظور تحليلي لتقييم الترتيبات التعاقدية التي تحكم النفط وتطوير الغاز الطبيعي في الدول المنتجة للنفط في الشرق الأوسط وشمال أفريقيا، بالاعتماد على الخبرة الدولية المقارنة. وتنظر أيضا الى العوامل التي تؤثر على الكفاءة والقدرة التنافسية للشركات الوطنية للنفط في هذه البلدان، والجوانب الرئيسية للعلاقات بين شركات النفط الدولية وهذه الحكومات، وقضايا الإدارة مقارنة بشركاتهم النفطية الوطنية، مثل التنافس الحيادي للحكومات. وجدت أن هذا النوع من الترتيبات التعاقدية استخدمت التأثيرات على مدى تقدم احتياجات ومصالح البلدان المضيفة، وأن تطبيق القيود السياسية والولايات غير التجارية لشركات النفط الوطنية تقلل من قدرتها التنافسية. وأخيرا، فإننا نرى أن شركات النفط الوطنية والتي لديها تنوع في الطبيعة والنطاق الجغرافي لأنشطتها لديها احتمال أقوى أن تبقى ذات أهمية في تغيير صناعة النفط والغاز الحالية.

1. Introduction

The Arab countries in the Middle East and North Africa (MENA) region have long been significant players in the global oil sector and are now key participants in the rapidly growing natural gas sector. Today, the region produces 33.3 percent of the world's oil and 20.7 percent of the world's natural gas, and has 52.8 percent and 44.6 percent of the world's proved oil and natural gas reserves, respectively.¹ The continued importance of the region's hydrocarbon capability cannot be understated, particularly as natural gas becomes an increasingly valuable, lower carbon emitting commodity.

Having abundant hydrocarbon resources does not, however, guarantee that a national oil company (NOC) will be successful or profitable, or that the country as a whole will benefit from hydrocarbon development. Rather, to obtain optimal advantages from their resources, governments of hydrocarbon-producing countries must carefully structure suitable laws and contractual arrangements to govern hydrocarbon development and to regulate the relationships between NOCs and international oil companies (IOCs) in such operations. It is likely that engagements between NOCs and IOCs will increase in the future, especially as NOCs continue to expand their operations beyond their home countries. Governments also need to effectively manage resource revenues for the benefit of the country as a whole. Since the global hydrocarbon sector is in constant flux, governments must be able to respond appropriately and promptly to evolving circumstances if they are to continuously optimize returns from their hydrocarbon development.

In the context of the MENA region's prominence in global hydrocarbon production, this paper will look at several issues that governments of these hydrocarbon-producing countries should consider when dealing with IOCs. These aspects include the role of contractual arrangements in ensuring that hydrocarbon-producing countries receive fair economic consideration for their resources. Another key issue examined is how contractual arrangements can facilitate NOCs' acquisition of the skills and technology needed for them to maintain production in their home countries, while also improving their ability to operate abroad in a competitive international market. Such skills and technology acquisition, especially from IOCs, may well come at a significant price as proprietary knowledge is not readily disclosed. There are a number of lessons that the region's NOCs may learn from IOCs in order to improve their performance and efficiency, and therefore their profitability, both at home and abroad. The importance of NOCs diversifying to remain relevant in the rapidly changing global hydrocarbon sector will be also examined.

Oman and Algeria will be used, where relevant, as illustrative examples.² Oman is an example of a Middle East country whose oil reserves are considerably depleted, yet Omani NOCs are reinventing themselves and expanding their capabilities, both at home and abroad, to remain relevant. Algeria is an example of a North African producer that is beleaguered by infrastructure and investment challenges at home, but which has notable natural gas and non-traditional hydrocarbon resources that necessitate that its NOC acquires the particular skills and technology needed to exploit these resources.

The issues outlined above will be approached from a practitioner's and lawyer's analytical perspective, which means, among other things, anticipating issues and resolving them before they become challenges or problems. The authors will draw on their experience and knowledge working on behalf of the public sector in the hydrocarbon industry in numerous countries worldwide, whether in structuring energy transactions, advising governments on drafting legislation or negotiating hydrocarbon development contracts, or engaging with state-owned-

¹ Figures compiled from data accessed at "Overview: Energy Source," EIA (using 2014 data).

² Full case studies on Oman and Algeria will not be provided, merely aspects of their contractual arrangements and hydrocarbon development practices will be used as illustrative examples.

enterprises (SOEs). This paper is intended to amplify the existing literature on these issues by bringing a practitioner's viewpoint to bear on these issues, revealing observed success factors that could improve the performance of NOCs in the MENA region.

2. Historical Background

Major structural changes in oil-producing countries in the MENA region, characterized primarily by increased state ownership and control of oil operations, came about in the wake of so-called resource nationalism in the 1950s and 1960s. Deep inequities had been inherent in the concession agreements of the MENA region for decades, and resource nationalism³ was triggered largely by growing dissatisfaction with the terms of these concessions.⁴ A rapid increase in global demand for oil and a raised awareness of the resource's high value further drove the resource nationalism movement.

Information asymmetries between governments and IOCs also played a role, as governments lacked the information that they needed on their own hydrocarbon resources to adequately negotiate with IOCs. The decades-long, almost permanent, duration of concessions limited governments' control over IOC operations within their borders.⁵ Oil-producing governments also became increasingly concerned about running out of oil due to IOCs' high extraction rates, and governments pushed for the adoption of depletion policies to maximize the social benefit from oil reserves.⁶

In the Middle East and elsewhere, oil-producing countries began to act collectively through groups such as the Organization of the Petroleum Exporting Countries (OPEC). IOCs were edged out as these governments created their own state-owned NOCs and assumed control over oil exploration and production activities. NOCs were generally formed through expropriation of private company assets or by participation agreements where the NOC gradually purchased private company assets.⁷ In most cases, nationalization took place after the most risky phases of hydrocarbon development had been completed, notably proving of resources and establishment of basic production processes.⁸

There were both political and economic reasons that prompted the governments of oil-producing countries to establish NOCs. Some of these motivations included the political desire to break from former colonial governments, as well as the need to be seen to be protecting their country's natural resource wealth and to correct market failures and inequities induced by information asymmetries. Oil-producing governments also aimed to use NOCs to further national developmental policies by improving forward and backward linkages between the oil sector and the domestic economy. Governments hoped that NOCs would serve as a lever to gain the technology and technical skills required to build modern societies and stronger economies.⁹ These arguments for NOCs, and SOEs more broadly, appeared most valid in regard to sectors prone to natural monopolies, where the technical requirements of an industry often necessitate that only one supplier exist.¹⁰ In these instances, regulation may be insufficient to curb potential abuse by private operators.¹¹

³ 'Resource nationalism' is a term which only partly describes the demand by countries for a larger and fairer share of the earnings from the exploitation of a nation's natural resources.

⁴ Stevens, "National oil companies and international oil companies in the Middle East," 10-11.

⁵ Robinson, "National Oil Companies and the Dual Mandate," 3-4.

⁶ Ibid, 4.

⁷ Marcel, "Oil Titans," 25.

⁸ Victor et al, "State-Owned Enterprises and the World Energy Supply," 892-893.

⁹ Stevens, "National oil companies and international oil companies in the Middle East," 10-11.

¹⁰ Chang, "State-Owned Enterprise Reform," 12.

¹¹ Capobianco & Christiansen, "Competitive Neutrality and State-Owned Enterprises," 7.

With the rise of resource nationalism in the MENA region, the involvement of IOCs declined and has continued to be relatively limited in the decades since. Today, the global hydrocarbon sector remains dominated by NOCs; it is thought that oil-producing governments and NOCs control over 80 percent of the world's oil reserves and an even greater share of proved natural gas reserves.¹²

Over the past few decades, NOCs have developed a global reach and many now successfully compete on an international scale with IOCs both at home and abroad. As the hydrocarbon sector continues to evolve today, with non-traditional hydrocarbon sources on the rise and natural gas becoming an increasingly important commodity, some MENA nations are again working closely with IOCs that have specialist expertise and know-how in these newer and emerging fields. A number of older oil fields are maturing and becoming more difficult and expensive to develop, necessitating the use of enhanced oil recovery techniques, improved reservoir management, and increased investment to maintain production over time. Where reserves are scarce and production is tough, governments are more likely to want to involve IOCs in such operations, with their concomitant heightened efficiency and capital resources.

3. Optimal Contractual Arrangements

In this changing context, it is useful to examine the various contractual arrangements used in the hydrocarbon sector to see whether they continue to serve the interests and meet the needs of oil-producing countries (with the exception of concessions, which in their previous form, rarely, if ever, serve the interests of oil-producing countries). Although different contractual names and categories are used, after negotiation, they are often similar in terms of the outcomes they reach.

Oil sector nationalization in many oil-producing countries resulted in governments replacing unfavorable concession agreements with contractual arrangements that better served national interests and fulfilled the needs of oil-producing countries. These governments did this through adopting contractual arrangements that, for example, better promoted technology transfer and further advanced local labor skills. Concession agreements were renamed Royalty Tax (R/T) Systems, and of those that remained in force, many underwent a number of changes to, for example, enable government to exert greater control over the terms of such arrangements.

Pre-World War II, hydrocarbon development rights across much of the Middle East were held by a few Western oil companies in a consortium arrangement. The Red Line Agreement bound these IOCs to only pursue development opportunities within the demarcated region (covering Bahrain, Abu Dhabi, Dubai, Yemen, Oman, and Qatar (and Saudi Arabia until 1947)¹³) as a consortium, with all members of the Iraq Petroleum Company (IPC) participating and in the same share proportions as in the IPC.¹⁴ Producing governments had no control over oil production, sales, or prices – these were all determined by the consortium.¹⁵ The concessions covered large areas and were of significant duration; 75 years in the case of Abu Dhabi.¹⁶ They were, therefore, not adjustable to changing aspirations of these countries.

The contractual arrangements that replaced concession agreements in the Middle East gave host countries, in a number of instances, equity interests in oil development projects. For some host governments, it allowed them to exercise more control and supervision over oil development activities and gave the NOCs of these countries the opportunity to learn from IOCs and acquire the management, operational, and technical skills necessary to implement oil

¹² Chow, blog on Foreign Policy, “Big Oil in Turnaround”; Helman, blog on Forbes, “The world’s biggest oil companies.”

¹³ Marcel, “Oil Titans,” 18.

¹⁴ Abu Dhabi National Oil Company History.

¹⁵ Marcel, “Oil Titans,” 15; 21.

¹⁶ Abu Dhabi National Oil Company History.

exploration and production projects. Some NOCs gradually increased their internal expertise and capabilities to implement oil exploration and production projects, acquiring growing shares in oil development projects. An example of a NOC that did this was Aramco, renamed Saudi Aramco after it had been completely nationalized by the Saudi government. Other NOCs, however, rapidly nationalized IOCs' assets without possessing the necessary expertise to embark on oil development projects, which led to a decline in productivity and profitability in the short term.

The 'obsolescing bargain' must be borne in mind when considering optimal contractual arrangements, namely that the risk associated with a hydrocarbon development project shifts over the lifecycle of a project.¹⁷ One such risk are prices, which are a key factor in NOCs' changing their approach to IOCs over time: when prices are low, governments seek out and incentivize private investment, but when prices are high, governments are more inclined to want to renegotiate contractual terms to make them more favorable for the government.¹⁸ Prices have a larger effect on hydrocarbons than other economic sectors because of the higher risk, sunk costs, and rents involved.¹⁹

If governments attempt to attract greater private investment in the hydrocarbon sector when prices are low, they may be in a weaker bargaining position vis-à-vis IOCs, and may resort to offering generous incentives to secure private investment. If investment opportunities are not attractive or if insufficient geological information is available on which IOCs can make informed investment decisions, bidding rounds may fail through poor turnout or overly-conservative bids. The importance of good negotiation, which is an art rather than a science, is often overlooked, particularly by those who are not negotiators or practitioners.

Once IOCs have sunk considerable capital costs in establishing their operations in the oil-producing country, however, they become more vulnerable to governments failing to honor the signed development contracts, especially if governments feel that these contracts are unfair. Contractual arrangements are most susceptible to unilateral amendments when they are not sufficiently adaptable to changing economic conditions. Therefore, to the greatest extent possible, without undermining certainty, flexibility needs to be built into contractual arrangements through the inclusion of economic terms that maintain fairness between the parties under evolving economic circumstances.²⁰ In this way, contractual arrangements can withstand the force of time.

There are some possible contractual arrangements for the exploration and production of oil and natural gas. Some arrangements may be more optimal than others depending on, among other things, the degree of government expertise in hydrocarbon development. The type of contractual arrangement that a country adopts may greatly influence the extent and nature of benefits that a host country may receive from oil and natural gas development. For example, some arrangements lend themselves to greater skills and technology transfer than others, while some require greater capacity of host governments than others. At the same time, as mentioned above, effective negotiation of contractual terms may yield similar outcomes across different contractual arrangements.

3.1 Concessions or royalty tax systems

Under the concession or R/T System, governments grant IOCs exclusive rights to explore for, develop, sell, and export oil extracted within a specified area for the term of the concession

¹⁷ Robinson, "National Oil Companies and the Dual Mandate," 3.

¹⁸ Victor et al, "State-Owned Enterprises and the World Energy Supply," 8.

¹⁹ Ibid.

²⁰ There are numerous other, varying risks that shift over the lifecycle of a development project that are not discussed here, including how risks are lower for all stakeholders during the development phase than in the exploration phase, and the risk of making non-commercial finds.

agreement.²¹ Previously, concessions gave IOCs complete discretion over oil operations and allowed them to choose their rates of exploration and production (and therefore the depletion rate), with the host government not having much, or any, input into such decisions and activities. Today, under the R/T System, terms are drafted by the host government in accordance with applicable law, which enables governments to maintain control over terms and regulate, among other things, the depletion rate.

The scope of R/T contracts may be quite narrow where the bulk of terms are entrenched in applicable law, enabling a relatively straightforward negotiation of the few (generally fiscal) terms open for discussion. Where applicable law is less established or ambiguous, the extent of terms open for negotiation under the R/T System may be considerably broader, and drafting the R/T contract will likely require skilled negotiators and technical, environmental, financial, commercial, and legal expertise to adequately represent the best interests of all parties.²² In instances where licenses are allocated according to a bidding system, the government publishes the terms and IOCs are invited to bid, and only minimal negotiation takes place on terms or conditions requested by the bidders. The successful bidding party is often required to pay a license fee or signing bonus upon winning the bid.

Under the R/T System, many (but not all) of the costs and risks associated with exploration and development are carried by the IOC.²³ In return for the right to develop hydrocarbon resources within the specified area, IOCs pay the host government royalties (calculated on gross production or, sometimes, gross production less post-production costs) and taxes (mainly income tax on profits, or additional taxes such as windfall taxes).²⁴ The R/T System is used by governments that choose not to participate directly in oil exploration and production activities. For example, both the United Kingdom and Norway use tax without royalty systems, a variant of the R/T System.²⁵

Under the R/T System, while royalties become payable as soon as oil production begins, income tax only becomes payable when the oil development becomes profitable. Producing governments can therefore use the royalty and tax tools at their disposal to balance early versus later revenue flow. However, there are many mechanisms that IOCs may use to avoid fully declaring profits in order to circumvent their income tax obligations, such as perpetually carrying forward losses and inflating affiliate company costs. The information gap between IOCs and governments on IOC revenue matters may also make it challenging for governments with low tax administration capacity to adequately and accurately monitor IOCs' compliance with their royalty and taxation obligations. This challenge is not unique to R/T Systems, however. Also, the R/T System may provide less opportunity for NOCs to acquire technology or skills from IOCs since NOCs do not participate directly in development activities under this system.

3.2 Joint ventures

There is no commonly accepted definition of joint ventures beyond them constituting two or more parties pursuing a joint undertaking, the details of which are often only clarified over time. The host government is generally party to the joint venture and frequently participates in it through its NOC. Joint ventures require an allocation of operational, management and financial risks and responsibilities between the parties, with most or all facets of the contractual arrangement being open for negotiation.²⁶ Having such a broad scope of negotiable issues

²¹ Radon, "The ABCs of Petroleum Contracts," 63.

²² Radon, "How to negotiate an oil agreement," 98.

²³ Ibid.

²⁴ Holland & Hart, "Deducting Post-Production Costs from Fee Royalty."

²⁵ EY, "Global Oil and Tax Guide, 2015."

²⁶ Radon, "How to negotiate an oil agreement," 101.

means that joint venture negotiations often take a significant period of time to finalize, especially in instances where the legal framework of the host country is underdeveloped or inadequate to govern hydrocarbon development in the host country.

Joint ventures require the parties to work together jointly on projects, to varying extents, thereby creating opportunities for the transfer of technology, skills, and expertise from IOCs to the host country's NOC.²⁷ The structure of the arrangement also means that the government and its NOC do not need to act alone in decision-making and is not solely responsible for a project; rather, the IOC's expertise can be relied on too.²⁸ The government can share in the profits of the joint venture (frequently in kind), as well as receiving any taxes or royalties that may be levied.

Oman favors joint ventures for the country's hydrocarbon development: over 80% of the oil and most of the natural gas produced in Oman is done by Petroleum Development Oman (PDO), a joint venture between the Government of Oman (60%), Shell (34%), Total (4%) and Partex (2%). In Oman, PDO is involved in exploration and production of hydrocarbons, as well as the construction and operation of hydrocarbon treatment and transportation facilities.²⁹

3.3 Production sharing contracts

The production sharing contract (PSC) model was originally developed in Indonesia as a nationalistic response to the inequitable colonial concession agreements. PSCs recognize that a country's hydrocarbon resources belong to the citizens of that country and not to private parties.³⁰ Today, the variability of PSCs is so great that their only common factor may be the concept of profit sharing, which achieves essentially the same outcome as the R/T System, but is frequently sharing in kind rather than revenue payments as under the R/T System.

IOCs are often required to pay a license fee or signing bonus (as with R/T contracts); however, with PSCs, this signing bonus is often waived or traded by the host government for a greater share in future profits.³¹ Much like the R/T System, IOCs undertake development activities and bear the bulk of financial and operational risks associated with such projects.³² In recent years, development costs have risen as operations have expanded into non-traditional hydrocarbons, deeper off-shore projects, and more mature fields that require enhanced extraction techniques. Cost recovery is therefore an issue of growing importance.

With PSCs, governments can set limits on an IOC's cost recovery to constrain how quickly an IOC can recoup costs, enabling profits to be attained sooner, and the government to receive a share of such profits earlier on in the project. Limits on cost recovery are achieved with rules such as ring-fencing, which requires that all costs associated with a particular block must be recovered from only that block.³³ Allowing IOCs to recover costs without ring-fencing limitations is a big incentive for IOCs, but will generally result in governments receiving a lower share of the profits. This prevents IOCs from carrying costs from blocks under exploration or early development across to more mature, profitable blocks. The depreciation period is a connected aspect, with longer depreciation periods tending to be preferable for governments as it enables them to receive a greater profit share earlier on in the project. Affiliated company costs must also be scrutinized to ensure that no transfer pricing is taking place that may undercut profit share due to the government.

²⁷ Ibid.

²⁸ Radon, "The ABCs of Petroleum Contracts," 66.

²⁹ "Shell Development Oman LLC."

³⁰ Radon, "How to negotiate an oil agreement," 99.

³¹ Ibid.

³² Ibid.

³³ Ashong, "Cost Recovery in PSCs," 10.

PSCs give rise to a difficult conflict of interests on the part of the host government: the host government is at once both a party in a commercial venture (thereby aiming to maximise profits, potentially at any cost) and the regulator of hydrocarbon development projects (thereby tasked with enforcing environmental and other regulations, adherence to which may lower the profitability of the development project).³⁴ Given governments' need for resource revenues, it comes as little surprise that host governments often fail to adequately regulate hydrocarbon development projects when they are a party to the undertaking. The same can, however, be said of host governments' participation in joint ventures.

The PSC structure has been adopted in many resource rich nations, including in Algeria and a number of other oil-producing countries in the MENA region. In Algeria, Sonatrach, Algeria's NOC, owns at least 51% of all upstream hydrocarbon projects in the country,³⁵ and also maintains a monopoly over midstream and downstream hydrocarbon projects.³⁶ By way of example, Sonatrach has entered into a number of PSCs with Maersk for upstream exploration and production projects in Algeria, including for Block 404 of the Berkine Basin, which is being developed under a PSC between Maersk Olie Algeriet AS, Sonatrach, Anadarko and Eni/Lasmo Oil (Algeria) Ltd.³⁷ The technology brought into Algeria by these independent IOCs has played a key role in boosting Algeria's hydrocarbon sector.³⁸ Sonatrach continues to actively seek IOC participation on mature fields that require enhanced oil recovery efforts.³⁹

As is common with PSCs, IOCs in Algeria previously bore all exploration and development costs. Recently, however, in an effort to increase foreign investment in the sector, Sonatrach has begun to share in costs if a commercial discovery is made and has reimbursed the IOC for Sonatrach's share of prior expenses. To ensure correct reimbursement of incurred costs requires a sophisticated administration, approval processes, and independent audits. Even greater foreign investment incentives were introduced in 2012 to lessen the financial risk borne by IOCs in Algeria. Under such incentives, Sonatrach undertook to contribute a portion of the exploration costs of future exploration projects, even if no commercial discovery is made. Other incentives specifically encourage IOC investment in unconventional hydrocarbon resources and exploration of underexplored areas, including offshore territory.⁴⁰

3.4 Service agreements

Governments may also enter into service agreements with IOCs, under which they pay IOCs to perform specific services. In this way, IOCs act as contractors and receive payment for the services they provide, which payment is independent of the discovery, sale, or price of oil or natural gas.⁴¹ This limits service companies' risk. Ownership of the hydrocarbon resources remains with the host country, as does the authority to make key management and strategy decisions. Governments have recently shown renewed interest in service agreements, partly to balance greater sovereignty concerns with IOC's capital and know-how.⁴²

Service agreements don't involve any profit sharing, and therefore may have a lower internal rate of return for IOCs than alternative contractual arrangements, particularly when prices are high. To counter this, service companies will seek to negotiate significant payments for their services and, depending on how such services are described or charged, the service company

³⁴ Radon, "How to negotiate an oil agreement," 100.

³⁵ "New fiscal terms positive for Algerian oil industry."

³⁶ Ibid.

³⁷ "Anadarko, Sonatrach and Partners Make Algerian Discovery."

³⁸ Fattouh and Darbouche, "North African oil and foreign investment in changing market conditions," 1128.

³⁹ Ibid, 1123.

⁴⁰ "New fiscal terms positive for Algerian oil industry."

⁴¹ Radon, "How to negotiate an oil agreement," 101.

⁴² Ghandi and Lin, "Oil and Gas Service Contracts."

can achieve comparable profitability.⁴³ This effectively makes service agreements a different form of negotiation posturing.

Service agreements are used in a number of countries, including Kuwait, where the constitution prohibits the use of participation arrangements that would allow an equity stake for IOCs in development projects, such as PSCs or joint ventures. The basis of this prohibition is that foreign companies are not allowed to own natural resources in Kuwait, and presumably, by extension, they cannot benefit on a profit-sharing basis from the production and sale of natural resources, including hydrocarbons. Instead, the Kuwait Oil Company enters into technical service agreements with IOCs to develop difficult projects that the Kuwait Oil Company would struggle to develop alone. For instance, the Kuwait Oil Company entered into an enhanced technical service agreement with Royal Dutch/Shell in 2010 for assistance in undertaking enhanced oil recovery projects in Kuwait's mature fields.⁴⁴ The Kuwait Oil Company has also signed a memorandum of understanding with Japan Oil, Gas and Metals National Corporation to test the feasibility of carbon dioxide injection as a potential enhanced oil recovery technique.⁴⁵

4. Ensuring Accountability and Transparency

Given the economic importance of, and the considerable amount of money involved in, the hydrocarbon sector in the MENA region, NOCs have the potential to dominate, or at least heavily influence, domestic politics. This is sometimes described as state capture, and may result in NOCs using the government to further their interests, rather than NOCs serving the purposes of government.⁴⁶ Additionally, it creates scope for NOC management to take advantage of information asymmetries to capture rent for their personal gain.

NOCs are often public monopolies that enjoy the benefits of operating in a highly protected business environment, where they have the advantages of soft budget constraints and are able to manipulate the regulatory environment to create considerable barriers to entry for competitors, particularly in downstream activities.⁴⁷ When NOCs are able to quell competition in this way, they tend to operate in an inefficient and unaccountable manner. This is problematic since NOCs are supposed to serve government interests and operate to maximize the value derived from hydrocarbon resources for the benefit of their citizens; therefore, their inefficiency translates into lost value for a country's citizens.

Another related drawback of SOEs, including NOCs, is that they are frequently immune from public scrutiny. They may benefit from lax reporting requirements where they are not required to report even to their governments, despite their governments supposedly managing them for the benefit of the public. This lack of reporting is partly due to the flawed but widely held belief that SOEs are already part of the government and therefore that there is no need for them to report to government or hold them accountable to government for their actions. It is also often due to a lack of mechanisms requiring SOEs to submit performance reports and disclose information to the government, and the inability of the public at large to force SOEs to undertake such reporting. As such, it is very difficult to ascertain information on NOCs, such as on the extent of their inefficiency, due to the shrouded nature of their operations. Lack of transparency, in turn, compounds the inefficiency problem and allows it to persist.

Regularly, there is also inadequate clarity regarding which agencies in the government SOEs should be regulated by and, consequently, which agencies they are accountable to. If more than

⁴³ Companies with considerable technical knowledge or skills will seek to charge handsomely for their services, in order to attain a higher rate of return.

⁴⁴ "Analysis: Kuwait," EIA.

⁴⁵ Ibid.

⁴⁶ Stevens, "National oil companies and international oil companies in the Middle East," 18.

⁴⁷ Ibid, 20.

one agency is tasked with monitoring and regulating a SOE, a gap in responsibility for such tasks may develop as each agency views the other agency or agencies as being responsible for monitoring and regulating activities rather than itself. This results in no real monitoring and regulation being undertaken by any of the designated agencies. Additionally, since the agency or agencies mandated to monitor and regulate SOEs do not have personally vested interests in the performance of the SOEs, as shareholders of IOCs have, there is less motivation for them to properly supervise SOEs. This is compounded by the perception that SOEs are simply another government agency, and therefore do not need close scrutiny.

The only MENA country currently in compliance with the requirements of the Extractive Industries Transparency Initiative (EITI) is, ironically, Iran, a nation which has been subjected to significant sanctions, especially in the oil and gas sector.⁴⁸ The vast majority of the participation agreements signed between IOCs and MENA governments and/or NOCs are not publicly available. As a result, the public is unable to ascertain the terms of such agreements, and is not empowered to monitor IOCs' and/or NOCs' compliance with them in any way. This is despite citizens being, theoretically at least, the ultimate beneficial owner of the hydrocarbon resources being developed by the NOC, and is in contrast to IOC shareholders, who have access to substantial information regarding the performance of IOCs, allowing them to closely monitor their performance.

Transparency is undeniably vital in keeping NOCs efficient and honest, and since transparency spurs efficiency and competition (and therefore profitability) and reduces the scope for impropriety and corruption, it should, in fact, be in the best interests of NOCs to be more transparent. Despite this, there remains a notable paucity of transparency and public reporting and disclosure from SOEs in many MENA nations, resulting in very little information being available on the SOE sectors in these countries. Little is known of the incidence of corruption or financial mismanagement in these SOEs beyond anecdotal evidence.

Information that should be publicly disclosed includes, but is not limited to, data on revenues collected by the NOC, a full accounting of the fiscal arrangement between the NOC and the government, expenditures by the company on quasi-fiscal activities, and company debts.⁴⁹ Technical information, which is often sensitive and proprietary in nature, is normally not revealed as its disclosure would weaken the bargaining position of the government and the NOC.

In Morocco, Oman, and Kuwait, state audit agencies exist and have wide powers to audit SOEs, as well as the authority to ensure that their recommendations are adopted by the SOEs in question.⁵⁰ If such audit authority is in fact exercised over the NOCs of these nations, it would go a long way to improving the efficiency of such NOCs. Independent, external financial audits should also be conducted, and their results published publicly.⁵¹

SOEs that have been publicly listed on a recognized stock exchange (either because it has been mandated by law, or otherwise) have tended to perform better as a result of improvements in governance arrangements and having to adhere to more transparent reporting requirements. This has enabled some degree of public monitoring and government audits in the sector. Public listing is not a panacea for improved governance, however, as seen with Petrobras' corruption scandal emerging less than five years after the NOC launched its first initial public offering (IPO).⁵²

⁴⁸ "EITI countries."

⁴⁹ Heller et al, "Reforming NOCs," 19

⁵⁰ OECD, *State-Owned Enterprises in the Middle East and North Africa*, 112.

⁵¹ Heller et al, "Reforming NOCs," 21.

⁵² Millard, blog on Bloomberg, "Petrobras Raises \$70 Billion as Investors See Growth."

There have also been efforts to disclose debt information on unlisted SOEs. For example, the United Arab Emirates intends to bring its debt prospectus rules into accordance with the European Prospectus Directive, which would necessitate a number of large Gulf-based companies disclosing their debt information.⁵³ Procurement procedures of SOEs should also be made more transparent and SOEs should be subject to procurement legislation requiring them to publish tender information for all bids exceeding a stipulated threshold.⁵⁴ Where too much flexibility regarding procurement is allowed, it creates scope for corruption and nepotism, particularly in environments where there is little transparency regarding procurement. Some have suggested that procurement transactions of SOEs should be made subject to board approval, much as they would be in private companies.⁵⁵

These and other measures are vital to increasing accountability and transparency in NOCs, both in the MENA nations and elsewhere. Accountability and transparency brings about efficiency, and efficiency leads to greater competitiveness and profitability. Therefore, NOCs should embrace mechanisms that promote accountability and transparency and take the initiative to implement them even in the absence of mandated requirements.

5. Succeeding at Home and Abroad

For NOCs to succeed, both at home and abroad, they need to have a number of things in place, including ample financial resources, advanced technology, qualified personnel with both technical and professional skills, the political support of their home governments, and political and cultural astuteness. Through developing these elements, NOCs transform themselves into efficient, professional, and competitive firms that are able to contend with IOCs.⁵⁶ There are many instances of SOEs being efficient and well managed firms, and a number of countries have achieved economic success and industrialization through strong SOEs, although inherent conflict of interests remain.⁵⁷ Many NOCs have been similarly successful. Some of these success factors will now be discussed.

5.1 Advanced technology and technical capabilities

IOCs tend to be more profitable than NOCs, and one of the primary reasons for this is that IOCs frequently get better ‘bang for their buck’, in part due to the greater efficiencies they achieve as a result of using more superior technology and having more responsive and more efficient processes, among other things. The focused drive for greater productivity and profit in IOCs necessitates that they continuously adopt new technology in order to keep ahead of the curve.⁵⁸ It is important that NOCs similarly invest in the most advanced technology to enable them to achieve greater efficiency, and therefore increased productivity and profitability. There is also a need to build the necessary technological capabilities for NOCs to use technology to maximum effect.

When NOCs are working jointly with IOCs on hydrocarbon development projects, it is often assumed that IOCs will share their advanced technology and technological expertise with their NOC counterparts. However, experience has shown that this is not a safe assumption to make, as IOCs have been known to share only their older technology with NOCs, understandably keeping their more advanced technology separate. Such a practice clearly counters governments’ attempts to gain improved technology and technological expertise from IOCs in their joint operations. Consequently, host governments need to push for contractual terms that

⁵³ OECD, *State-Owned Enterprises in the Middle East and North Africa*, 89.

⁵⁴ *Ibid.*, 112-113.

⁵⁵ *Ibid.*

⁵⁶ Jose & McCreery, blog on Bain & Company, “How national oil companies can fuel economic development.”

⁵⁷ Chang, “State-Owned Enterprise Reform,” 8-9; Radon & Thaler, “Resolving conflicts of interests in state-owned companies,” 13.

⁵⁸ Hartley and Medlock, “A model of the operation and development of a National Oil Company,” 2463.

are most conducive to maximizing technology and technological capability transfer from IOCs to NOCs, notwithstanding that this will be costly.

At the same time, governments should not rely solely on IOCs sharing their technology and technical expertise under joint projects, but should also independently invest in superior technology and concomitant technical expertise. Those who supervise NOCs in state administrations must similarly come to appreciate the need for investments in technology and technological expertise, and support (rather than counter) NOCs' investments in this regard.⁵⁹

5.2 Employing the best personnel available

In addition to investing in the most advanced technology available, IOCs also hire the best people in the world in their relevant fields, and pay their employees commensurately well. IOCs frequently invest in their employees professionally, providing opportunities for continued training and professional development that improve employees' capabilities and raise their efficiency and productivity, while also serving as important non-monetary incentives for employees.⁶⁰

NOCs' hiring practices vary widely. While some NOCs have human resource practices on par with IOCs, other NOCs may have political appointees (who often lack the required skills and expertise) in key management positions. Many NOCs fall along the spectrum in between. Managers who are political appointees may view their management responsibilities through political lenses. Where political appointees are in post, their continued employment is often not based on performance but rather on political loyalty or aspiration, which may allow instances of managerial inefficiency or incompetence to persist. Such practices reduce the NOC's efficiency, productivity, and profitability, and may make the NOC dysfunctional. Even where NOCs subcontract some activities to service companies, they must still have the necessary expertise to evaluate bids, supervise subcontractors, and integrate subcontracts into the NOC's overall strategy.⁶¹ Expertise is required for auditing and supervision, among other things, even where NOCs subcontract all activities from exploration to sale.

The appointment of political loyalists to top SOE management positions may be anti-competitive as it closely connects SOE management to top echelons of the executive branch of government. This creates scope for such appointees to evade accountability or disciplinary action, to lobby politicians for government to intervene in markets on their behalf, and to receive informational advantages that benefit SOEs over private sector competitors.⁶² Political appointees may make choices that curry favor with the government rather than decisions that are in the best interests of the SOE or the host country. This, together with comparatively low salaries at SOEs, including at NOCs in many instances, encourages corruption in dealings and operations.

Managerial structure and processes in NOCs also frequently resist change. For example, the senior management of many NOCs establish a large gap between themselves and the next generation of management. This is done in order to prevent more junior managers from gaining capacity and experience, thereby ensuring that senior managers retain their positions as governments are less likely to remove senior management when their successors do not appear ready to take over.⁶³ More junior managers may also pass decision-making functions up to more senior managers, which inhibits operational efficiency.⁶⁴ As a result of these dynamics,

⁵⁹ Radon & Thaler, "Resolving conflicts of interests in state-owned companies," 14.

⁶⁰ When oil and natural gas prices fall, however, IOCs may need to lay off significant portions of their personnel. Given the cyclical nature of the hydrocarbon sector, the lack of predictability in tenure may be unattractive for some skilled personnel.

⁶¹ Victor et al, "State-Owned Enterprises and the World Energy Supply," 913.

⁶² Capobianco & Christiansen, "Competitive Neutrality and State-Owned Enterprises," 30.

⁶³ Stevens, "National oil companies and international oil companies in the Middle East," 20.

⁶⁴ Robinson, "National Oil Companies and the Dual Mandate," 6.

many NOCs, including those in the MENA region, are now facing the dilemma of an ageing workforce and an inexperienced pool of junior personnel on the one hand, and nationalization pressures to reduce reliance on expatriate personnel on the other hand.⁶⁵ A concerted effort from both the public and private sectors is needed to address this capacity gap through, for example, partnerships with universities and graduate programmes.⁶⁶

Governments of oil-producing countries would do well to prioritize hiring and retaining highly qualified staff by appointing personnel on grounds of merit, and implementing effective monetary and non-monetary incentive schemes for all managers and employees to encourage greater productivity. So, too, it is necessary for governments to ensure that the management structure of their NOCs allows for capacity building throughout management tiers and for ‘new blood’ to be periodically introduced into senior management.

5.3 Improved operational management

Governments of oil-producing countries frequently maintain tight political constraints on their NOCs, largely due to the economic importance of the hydrocarbon sector for government revenues and the considerable reliance that national treasury may have on profits from the sector. A dilemma arises for such governments in this regard as, on the one hand, excessive government control over NOC management and operations may render the NOC cash-strapped and inefficient, but on the other hand, allowing a NOC too much autonomy may result in it failing to pursue its non-commercial objectives.⁶⁷ Too much NOC independence has led to the establishment of a ‘state within a state’, where NOCs move beyond government control and may, in fact, undermine the government’s authority.⁶⁸ Overemphasizing a NOC’s non-commercial or social objectives, in comparison to its commercial goals, has been seen to reduce a NOC’s competitiveness and limits its ability to pursue economic opportunities both at home and abroad.

Within the political confines in which NOCs operate, they could benefit from improving their management strategy. NOCs, unlike IOCs, are frequently tasked with advancing government policy and non-commercial, social mandates that are outside the scope of their regular commercial operations. This has led to a situation where NOCs may be 35 to 65 percent less efficient than IOCs, and almost 66 percent less effective at converting reserves into production due to their mandated social objectives and subsidized domestic fuel prices (although figures vary greatly across NOCs).⁶⁹ It is vital that NOCs balance their governments’ political demands with the need to be commercially competitive if they are to achieve their dual mandate to profitably produce hydrocarbons while also promoting domestic social and economic development.⁷⁰

In some ways, being required to further non-commercial objectives may make NOCs notably progressive. For example, some have traditionally offered advantageous social benefits and more family-friendly working hours than private sector firms. Some promote affirmative action for women and minorities, and provide basic services.⁷¹ At the same time, however, they are sometimes mandated to create fictitious employment and retain unnecessary employees to assist government in achieving employment targets. Overstaffing is particularly prevalent in SOEs that operate as monopolies with government subsidies and other protection benefits.⁷²

⁶⁵ “Middle East national oil companies face talent challenges.”

⁶⁶ Ibid.

⁶⁷ Stevens, “National oil companies and international oil companies in the Middle East,” 19.

⁶⁸ Victor et al, “State-Owned Enterprises and the World Energy Supply,” 10.

⁶⁹ Robinson, “National Oil Companies and the Dual Mandate,” 5.

⁷⁰ Marcel, “Oil Titans,” back cover; Robinson, “National Oil Companies and the Dual Mandate,” 1.

⁷¹ Chang, “State-Owned Enterprise Reform,” 22.

⁷² Kikeri, “Privatization and Labor: What Happens to Workers when Governments Divest?” 3.

Over-employment is not uncommon in the MENA region. For example, in Kuwait, some 76 percent of the national labor force is employed in the public sector, particularly in petroleum-related SOEs.⁷³ Similarly, in Egypt, Algeria, Syria and Saudi Arabia, the state remains one of the largest employers, using either government ministries or SOEs to absorb labor.⁷⁴ Overstaffing raises costs and reduces productivity: NOCs on average employ 71 percent more personnel, yet produce 18 percent less output, than IOCs of comparable asset bases.⁷⁵

In addition to the chronic over-employment problem, many MENA nations provide government employees with salaries and benefits that exceed those of the private sector, by a regional average of some 30 percent.⁷⁶ This is contrary to the rest of the world, where private sector employees generally earn 20 percent more than public sector employees, on average, and is at odds with aims to increase private sector employment.⁷⁷ Indeed, the MENA region has the highest public sector wage bill in the world, estimated at about 10 percent of GDP (in comparison to a global average of just over 5 percent of GDP), according to the IMF.⁷⁸ This situation is exacerbated by generous pension benefits which encourage public sector employees to retire as early as their mid-40s.⁷⁹ These notable benefits are particularly problematic if these civil servants are not productive, and if they cannot be fired. These dynamics pose a major obstacle for privatization efforts, should privatization be considered. Since overstaffing is unacceptable to private sector buyers aiming to improve the efficiency and profitability of SOEs, SOEs need to undergo reforms either before or during privatization, with concomitant political backlash.

Although attaining returns on investments and providing social, political, and economic services need not always conflict, in practice they generally do. While meeting social objectives does not necessarily make a NOC technically inefficient, as mandated objectives are nonetheless being achieved, they do often threaten the efficiency and productivity of NOCs' commercial operations and make them less able to compete with IOCs. It is unclear how successful NOCs are at delivering on their social objectives while also maximizing revenue for their governments.

The many social goals that NOCs are tasked with may also distract management from the NOCs' core functions and purpose: namely, to make hydrocarbon development projects as profitable as possible for the host country. Meeting specific social objectives, such as creating employment, reducing poverty, and providing basic services, stretches NOCs' capacity to reach any of these goals thin. It also impairs NOCs' ability to fulfil their commercial objectives as the cost of pursuing social goals often leaves NOCs cash-strapped and without sufficient revenues to maintain assets or to fund investments needed to maintain or increase production.⁸⁰

In exploring NOCs' balancing of firm profitability against achieving social or political objectives, studies have found that the negative impacts of pursuing non-commercial goals tend to reinforce one another in reducing the NOCs' commercial profitability.⁸¹ Hydrocarbon development performance is highest in NOCs that are able to focus on hydrocarbon exploration and production.⁸² There are no top-tier performers that are also tasked with notable non-

⁷³ OECD, *State-Owned Enterprises in the Middle East and North Africa*, 60.

⁷⁴ *Ibid.*

⁷⁵ Robinson, "National Oil Companies and the Dual Mandate," 5.

⁷⁶ OECD, *State-Owned Enterprises in the Middle East and North Africa*, 61.

⁷⁷ *Ibid.*

⁷⁸ *Ibid.*

⁷⁹ Peel, blog on *Financial Times*, "Pay: How to compete with a generous public sector."

⁸⁰ Stevens, "National oil companies and international oil companies in the Middle East," 20.

⁸¹ Hartley and Medlock, "A model of the operation and development of a National Oil Company," 2459.

⁸² Victor et al, "State-Owned Enterprises and the World Energy Supply," 902.

commercial objectives, whereas the worst performers are invariably responsible for major social goals.⁸³

The myopic nature of politics also results in government officials discounting future profits more heavily than IOC managers would, and they may insist on too much social spending today at the expense of investing to increase commercial profits in the future.⁸⁴ This short-term mentality is further compounded by the sector being based on depleting non-renewable resources and the circulation economies (rather than productive economies) of rentier nations.⁸⁵

Despite the clear drawbacks of tasking NOCs with numerous non-commercial objectives, mandating NOCs to advance social goals is not necessarily a problem if such social goals are clearly defined and their importance is determined relative to commercial goals. If NOCs are to be tasked with advancing social objectives, such activities should be formalized and NOCs should be adequately compensated for their work in this regard. A good example of this is seen in Morocco, where a contractualization programme between the Moroccan government and its SOEs was introduced to clarify the parties' respective commitments and the means to achieve such commitments.⁸⁶ The OECD Transparency and Accountability Guide also provides counsel for governments in setting non-commercial goals for their SOEs and appropriately compensating them for their work towards achieving such goals.⁸⁷

Some NOCs have managed to fulfil their non-commercial development objectives surprisingly well – a key example being Saudi Aramco. Saudi Aramco essentially became a de facto national development agency tasked with a wide variety of non-commercial objectives, including building a football stadium and the King Abdullah University of Science and Technology, and supporting the development of small and medium enterprises.⁸⁸ However, there was concern that mandating Saudi Aramco to fulfil so many tasks beyond the scope of hydrocarbon development would eventually dilute the company's objectives and reduce its ability to achieve its commercial goals.⁸⁹ It may also lead to the politicization of the NOC. To address this, Saudi Aramco put a price on its development tasks and would charge the Saudi government for such work, while also establishing a long-term strategy for maintaining profitable operations within the constraints of fulfilling non-commercial objectives.⁹⁰ Further significant reforms, including partial privatization, are anticipated for Saudi Aramco under Saudi Arabia's National Transformation Programme, the country's new plan for economic diversification.⁹¹

It is therefore necessary for NOCs to resist too much government involvement in their operations if they are to achieve and maintain a degree of autonomy from government, or retain some freedom to develop market strategies and make investments that they deem to be in the commercial interests of the NOC. Studies have shown that government constraints on NOCs impair their performance more than managerial weaknesses do, and most performance challenges are structural rather than managerial in nature.⁹² Governments' time horizons deeply influence NOC's investment strategies. Governments with long horizons tend to allow their

⁸³ Ibid, 902-3.

⁸⁴ Hartley and Medlock, "A model of the operation and development of a National Oil Company," 2462.

⁸⁵ Alvarez, "Rentierism in the Algerian economy based on oil and natural gas," 6339.

⁸⁶ Semmar, "Corporate governance of state-owned enterprises in Morocco," 162.

⁸⁷ OECD, *State-Owned Enterprises in the Middle East and North Africa*, 111.

⁸⁸ Ibid, 36.

⁸⁹ Ibid.

⁹⁰ Ibid.

⁹¹ Kerr, blog on Financial Times, "The Saudi Reshuffle: five key reforms in Riyadh."

⁹² Victor et al, "State-Owned Enterprises and the World Energy Supply," 914.

NOCs to adopt more long-term investment strategies, whereas governments under pressure to deliver on a short-term basis may constrain NOC's long-term investments.⁹³

5.4 Improved revenue management

IOCs must maintain their profitability or else they will fail financially and be placed in administration or liquidation. Even those IOCs considered by some to be too big to fail have no guarantee that they will be bailed out in the event that they experience financial difficulties. This need to achieve profit ensures that IOCs have no other option but to operate as efficiently, productively, and profitably as possible.

In contrast, SOEs generally enjoy soft budget constraints. If they experience financial difficulties, the government, as owner, is likely to bail them out, even where the SOE's poor financial performance is due to incompetency or mismanagement. Soft budget constraints negatively affect management behavior, even where constraints are only perceived. SOE managers may perform sub-optimally as they do not fear takeovers and they are shielded from the disciplining effects of capital markets.⁹⁴ Additionally, since equity is locked in SOEs, they are able to generate losses over a prolonged period of time without the threat of bankruptcy.⁹⁵ This undoubtedly creates a degree of moral hazard with SOE managers – they are not sufficiently incentivized to perform well as they face little threat of discipline if they fail to ensure that operations are profitable.

SOEs, including NOCs, also receive both direct and indirect support from the government, which, as owner, views providing such loans as a prerogative of an owner. Direct support is often in the form of loans, which may be free or cheap as they are subsidized by the state, but which are frequently still not repaid. Indirect support includes subsidies, concessionary financing, and access to resources and land at below market prices. Although it is difficult to measure and aggregate all the financial and other benefits that NOCs and other SOEs receive from their governments and from inter-SOE transactions at below market prices, it is important that these costs be identified and accurately quantified if fair competition between NOCs and private firms is to be achieved and the performance of the NOC to be properly evaluated. Apart from being anti-competitive, the various direct and indirect benefits that NOCs receive from governments may have considerable cost implications and be a notable financial drain on the country, particularly during times of low hydrocarbon production or prices.

There is a clear need to reduce or eliminate NOCs' reliance on government bailouts and on below-market price transactions with the government and other SOEs. Some interesting and creative initiatives have emerged in this regard. For example, the government of Abu Dhabi now requires that SOEs obtain explicit guarantees from the government before undertaking borrowing obligations, thereby ensuring that SOEs can no longer borrow in an unrestricted way and assume that the government will meet their obligations on their behalf. It is important that these and other mechanisms, which reduce NOCs' ability to benefit from distortions, are adopted and implemented throughout the MENA region.

Conversely, as outlined above, it is equally important that NOCs are able to retain an adequate portion of their profits for reinvestment in research and development, new technologies, and expansion of production capacity. If all, or significant part of, NOCs' profits are diverted to the national budget, NOCs will be cash-starved and unable to invest sufficiently in maintaining or expanding production. By way of example, there have been times where Sonatrach has been so cash strapped as a result of being unable to retain adequate revenues for self-financing that

⁹³ Ibid, 18.

⁹⁴ Capobianco & Christiansen, "Competitive Neutrality and State-Owned Enterprises," 7.

⁹⁵ Ibid.

it has been forced to turn to capital markets to obtain investment capital to satisfy its financing needs,⁹⁶ which will normally significantly condition the terms of such financing.

With global oil prices being notably low at the moment, governments are under greater pressure to take larger portions of NOCs' earnings to cover national budgetary requirements. This will reduce the funding available for NOCs to reinvest in their hydrocarbon production projects.⁹⁷ The short-term benefits to government of using NOC profits to contribute to national budget financing must be considered against the long-term detriment to NOCs of not being able to reinvest their profits in improving or expanding their operations.

5.5 Supportive domestic policy

Vertical integration of domestic value chains with hydrocarbon development activities is vital for broad-based economic growth in oil-producing countries. NOCs can be effective conduits for plugging capital, technology, and know-how into local suppliers of goods and services.⁹⁸ Local opportunities and advantages are created out of NOCs nurturing entrepreneurs and providing assistance for local suppliers to gradually develop into globally competitive firms.⁹⁹ In this way, sustainable economic growth and greater employment opportunities can be built off the back of hydrocarbon development. Oman's NOCs, for example, are expected to contribute to the growth of local suppliers through providing mentoring and expertise to entrepreneurs.¹⁰⁰ NOCs may also serve to distribute the economic benefits of hydrocarbon development and can be powerful drivers of economic change.¹⁰¹ For example, Saudi Arabia sells shares in its SOEs to the public at below market cost in order to redistribute wealth.¹⁰²

When hydrocarbon-related industry is geographically clustered near hydrocarbon production centers, NOCs may promote the creation of interconnected and specialized suppliers, service providers, and other firms in related sectors.¹⁰³ This clustering increases productivity, encourages innovation, lowers operational costs, benefits from a concentrated supply of relevant skills, and may enjoy superior infrastructure services such as reliable electricity supply.

Oil and natural gas production is a worldwide business and therefore a global perspective regarding the sector is vital. If NOCs are going to expand their operations abroad, it is vital that they have the support of their home governments, which support will need to extend to potentially lobbying host governments on behalf of their NOCs.¹⁰⁴ For example, the Malaysian government supports Petronas' overseas operations through trade missions and high-level visits.¹⁰⁵ The governments of MENA countries should be willing and able to undertake such activities in support of their NOCs, without politicalizing such support. Sonatrach has been particularly successful in utilizing relationships that the Algerian government has established with other oil-producing countries in its efforts to increase its operations abroad, and has leveraged such connections while also benefitting from the long-term perspective enabled by secure access to hydrocarbon reserves at home.¹⁰⁶

⁹⁶ Robinson, "National Oil Companies and the Dual Mandate," 8.

⁹⁷ Ibid, 9.

⁹⁸ Jose & McCreery, blog on Bain & Company, "How national oil companies can fuel economic development."

⁹⁹ Ibid.

¹⁰⁰ Ibid.

¹⁰¹ Ibid.

¹⁰² Nair et al, blog on Bloomberg, "Shock, Laughter Greet Plan for Saudi Arabia's Record Oil IPO."

¹⁰³ Jose & McCreery, blog on Bain & Company, "How national oil companies can fuel economic development."

¹⁰⁴ It is frequently difficult to distinguish such lobbying from politics.

¹⁰⁵ Marcel, "Oil Titans," 70.

¹⁰⁶ Alvarez, "Rentierism in the Algerian economy based on oil and natural gas," 6343.

Being engaged in hydrocarbon development operations internationally in upstream, midstream and downstream activities would assist the NOCs of MENA countries to keep fully abreast with developments in the sector globally, empowering them to make informed decisions regarding their investments abroad and at home. Global operations also require NOCs to be capable of complying with environmental, health, safety, and other regulations in foreign jurisdictions, including those of higher calibre than standards in their home countries. In line with this, Sonatrach, for example, has adapted its safety, environmental, and human resource systems to comply with international standards.¹⁰⁷ Other NOCs would do well to follow suit.

6. Competitive Neutrality

A key factor connecting all the lessons that NOCs may learn from IOCs, as outlined above, is the need to increase the competitiveness of NOCs. NOCs must become more competitive to both be more efficient and profitable in their own operations, and to compete more successfully with IOCs, both domestically and internationally. The MENA region has long been protective of their NOCs, so a paradigm shift will be needed for MENA governments to move from NOC protectionism to competitiveness.

The first step in improving NOCs' competitiveness is to ensure that NOCs are subject to the same regulations and standards that IOCs are. This requires political will. Frequently, SOEs are excused from complying with regulations applicable to private firms. In other instances, SOEs are allowed to receive benefits from government that private firms do not enjoy, such as government subsidies, concessionary financing, guarantees, monopolies, and incumbency advantages.¹⁰⁸ Governments have vested interests in the success of their SOEs, which incentivizes them to perpetuate such market distortions. However, governments are also tasked with strengthening market integrity on a wider level, and removing such distortions (thereby promoting competitive neutrality) is necessary for them to achieve this.

Competitive neutrality requires that governments do not favor their own businesses over private firms through the use of legislative, fiscal, or other powers¹⁰⁹ In essence, competitive neutrality aims to eliminate the advantages that government businesses have over private firms simply because they are state-owned.¹¹⁰ To this end, laws and policies to enforce competitive neutrality have been introduced in numerous countries and by various regional cooperative bodies. For example, the OECD and European Union have introduced comprehensive competitive neutrality frameworks that not only curb the anti-competitive behavior of SOEs, but also identify and eliminate any additional advantages SOEs may enjoy with respect to, among other things, taxation, regulatory neutrality, and financing costs.¹¹¹ Considerable economic efficiency gains have been attained in countries where competitive neutrality regulations have been implemented and state subsidies have been reduced or eliminated.¹¹²

In line with such initiatives, there has been some effort to level the playing field in this regard in some MENA nations, largely through the enactment of competition legislation that prohibits SOEs from engaging in anti-competitive behavior. It is not yet clear how comprehensive such legislation is or how effectively it is being implemented and enforced. In some instances, SOEs are not included in the remit of the competition laws, and in other countries, certain SOEs or sectors are specifically excluded from the scope of the competition laws. Further, even if SOEs are technically subject to competition legislation, statutorily-established entities may be explicitly exempt, which would mean that a number of key SOEs would be exempt on this

¹⁰⁷ Ibid.

¹⁰⁸ Capobianco & Christiansen, "Competitive Neutrality and State-Owned Enterprises," 5-6.

¹⁰⁹ Ibid, 5.

¹¹⁰ Ibid, 11.

¹¹¹ Ibid, 3.

¹¹² Ibid.

basis. It is not clear how NOCs, specifically, are treated under the competition legislation enacted by the various MENA countries.

The following are examples of the progress of implementation of competition legislation in some MENA countries:

- Jordan: enacted the Trade Secrets and Unfair Competition Law in 2000;¹¹³
- Algeria: enacted competition legislation and established the Algerian National Competition Council in 2013;¹¹⁴
- Saudi Arabia: enacted the Competition Law in 2014,¹¹⁵ and established the Council of Competition Protection to supervise the implementation of the Competition Law¹¹⁶;
- Oman: enacted competition legislation in 2014;¹¹⁷
- Egypt: competition law has been enacted, but public entities are not within its remit.¹¹⁸

To ensure full implementation of such laws and achievement of competitive neutrality in practice, effective and continuous monitoring and enforcement of applicable legislation is required. As noted above, this requires political will. This necessitates the establishment of capable agencies tasked with monitoring and enforcement responsibilities. Since the enactment of competition legislation and the creation of competition authorities in relevant MENA countries is relatively recent, it is not yet clear how effective the implementation of such competition laws is or will be. Further, those competition authorities that have been established have had little experience investigating SOEs for anti-competition practices and they may, arguably, operate with reduced effectiveness during this learning time. Ideally, in addition to having competition authorities, there should be regulators for each key sector, tasked with regulating and monitoring the activities of SOEs beyond competition issues.

The potential effectiveness of competition authorities and sectoral regulators depends on their operational and financial independence from national government. For example, Tunisia's Competition Council's budget is approved (but not established) by parliament, and it submits its annual reports directly to the president.¹¹⁹ This gives Tunisia's Competition Council a level of operational and financial independence beyond that of sectoral regulators in, for example, Morocco, Lebanon and Jordan, which lack financial independence and suffer low effectiveness as a result.¹²⁰

Similarly, competition authorities should be able to launch investigations into SOEs on their own initiative, rather than only on the instructions of a minister or other government official.¹²¹ Evidence from the MENA region suggests that competition authorities in these countries do not always have sufficient mandates or political support to launch investigations into SOEs on their own accord.¹²² The institutional autonomy of competition authorities is best promoted by ensuring that they report directly to the executive and not to any ministry.¹²³

¹¹³ Jordan's Trade Secrets and Unfair Competition Law No. 15 of 2000.

¹¹⁴ "Algeria – Competition Law – February 2013."

¹¹⁵ Saudi Arabia's Competition Law (M/25).

¹¹⁶ Global Competitiveness Forum.

¹¹⁷ The Sultanate of Oman's Royal Decree Bearing Number 67/2014 Promulgating Competition Protection and Monopoly Prevention Law.

¹¹⁸ Egypt's Law of Protection of Competition and Prevention of Monopoly Practices, No. 3 of 2005.

¹¹⁹ OECD, *State-Owned Enterprises in the Middle East and North Africa*, 78.

¹²⁰ *Ibid.*

¹²¹ *Ibid.*, 111.

¹²² *Ibid.*

¹²³ *Ibid.*

Given that there is some similarity in the mandates of competition authorities and sectoral regulators as regards SOEs, the division of responsibilities between these agencies must be clearly delineated. A lack of clarity as to which agency is responsible for a particular task will invariably lead to one or both agencies shirking their responsibility. Investigations will be inefficient and, likely, inadequate, as a result. Conversely, when responsibilities are clearly divided between competition authorities and sectoral regulators, and a memorandum of understanding to that effect is signed between these agencies, investigations are likely to be more comprehensive and efficient.¹²⁴

Another mechanism to promote competitive neutrality is partial listing of SOEs on stock exchanges, since listed companies, even those with the government as a majority or sole shareholder, have less scope to pursue non-commercial goals as they are bound by fiduciary duties and listing requirements.¹²⁵ Public listing can raise accountability and market discipline as NOCs are incentivized to demonstrate their strong commercial prospects and sound and effective management.¹²⁶ For these reasons, publicly listed companies are generally more accountable for their operations and are less vulnerable to being misused.

However, public listing becomes difficult with NOCs as their inner dealings are often opaque, making their true value unclear. For example, Saudi Aramco is currently working on an IPO of under 5 per cent of the NOC's value.¹²⁷ However, Saudi Aramco's value is thought to be anywhere between US\$1 trillion and upwards of US\$10 trillion, making it difficult for investors to make informed investment decisions.¹²⁸ Listing would also require that Saudi Aramco disclose to potential investors detailed information on the NOC's reserves and production capacity, and certain financial information, which is considered to be sensitive information.¹²⁹ Therefore, in practice, partial listing is a challenging option for NOCs, and SOEs more generally. However, disclosure of some of this information is possible, as shown by the undertaking to publicly disclose all relevant financial information on Saudi Aramco.¹³⁰

Improving the competitiveness between SOEs and private firms may not be very effective in strategic sectors that, by nature, lend themselves to monopoly domination by SOEs, such as the hydrocarbon and defense sectors. This is particularly so when there are no apparent plans to change the monopolistic structure of the sector.¹³¹ However, enforcing competitive neutrality in such sectors would still improve the operations of SOEs, thereby raising their efficiency and productivity. Therefore, even NOCs that operate in isolation of IOCs stand to benefit from efforts that would increase their competitiveness. Further, any NOC operating abroad will need to comply with competition law in such jurisdiction, therefore boosting their competitiveness will be necessary, even in instances where they enjoy a monopoly at home.

7. Strategic Diversification to Survive Sector Changes

To survive in changing times, NOCs must be dynamic and able to adapt to domestic and global fluctuations in the hydrocarbon sector. The extent and form of adaption necessary will depend on the particular circumstances that an oil-producing country and its NOC(s) find themselves in. The two different paths of Oman and Algeria will be explored in this regard.

¹²⁴ Ibid.

¹²⁵ Capobianco & Christiansen, "Competitive Neutrality and State-Owned Enterprises," 8.

¹²⁶ Heller et al, "Reforming NOCs," 12.

¹²⁷ El Gamal, "Saudi Aramco finalizes IPO options and plans global expansion."

¹²⁸ Nair et al, blog on Bloomberg, "Shock, Laughter Greet Plan for Saudi Arabia's Record Oil IPO."

¹²⁹ Ibid.

¹³⁰ Kerr, blog on Financial Times, "The Saudi Reshuffle: five key reforms in Riyadh."

¹³¹ OECD, *State-Owned Enterprises in the Middle East and North Africa*, 74.

7.1 Oman: diversification into midstream and downstream activities

Oman's domestic oil reserves are considerably depleted, which is a potential national crisis for Oman. Those fields that remain in operation tend to be mature fields that require expertise in enhanced oil recovery techniques and much investment to maintain some degree of production. Oman has chosen to continue to exploit these fields under joint ventures with IOCs that have expertise in such activities, and this arrangement serves to both share risk and financial costs and also increase the efficiency and profitability of Oman's remaining oil development projects. Additionally, the joint venture arrangements allow Oman to acquire the particular improved technology, skills, and expertise associated with such specialized activities from the IOCs in the process. So, too, the joint venture facilitates development of the soft skills, whether legal, management, or supervisory, needed to work with IOCs and their market oriented corporate structures.

Cognizant of the limited lifespan of Oman's domestic upstream exploitation and production potential, Omani NOCs have made some notably strategic decisions to move into midstream and downstream activities, both in Oman and abroad. Oman Oil Company SAOC (**OOC**) is wholly owned by the Sultanate of Oman, and pursues investment opportunities in the hydrocarbon sector. OOC's current domestic diversification efforts include an expansion into port and storage facility operations, through projects such as the development of a planned crude storage terminal at Ras Markaz near the Port of Duqm,¹³² and berthing, storage, and handling facilities for petroleum products, chemicals, and gases at the Port of Sohar.¹³³ Such developments will raise Oman's importance as a geographically strategic location in the transport and storage of hydrocarbons and hydrocarbon-related products in the Middle East. Through such initiatives, which are being undertaken in partnership with companies developing the ports and associated facilities, Oman is ensuring that its NOC will remain relevant and competitive in hydrocarbon markets internationally, despite the decline of the country's oil production.

Oman's projects abroad include OOC's joint venture with China Gas Holdings Limited (signed in 2007), according to which OOC and China Gas have equal shareholding in the joint venture.¹³⁴ The joint venture was formed to import liquefied natural gas, liquefied petroleum gas, crude oil, and fuel oil into China from the Middle East and elsewhere.¹³⁵ OOC has also entered into a joint venture with Bharat Petroleum Corporation Limited to operate a refinery producing greener auto fuels in Madya Pradesh, India.¹³⁶ OOC's participation in midstream and downstream operations under joint ventures in hydrocarbon-hungry China and India appears to be a shrewd move. By moving abroad, OOC is able to apply its existing expertise in an environment where such knowledge and skill is in significant demand.

7.2 Algeria: pursuing upstream opportunities abroad

Algeria still has considerable domestic oil and natural gas reserves, estimated at more than 12 billion barrels of oil and around 4,500 billion m³ of natural gas, and significant swathes of the country and its offshore territory are yet to be explored.¹³⁷ Sonatrach, Algeria's NOC, has leveraged this secure long-term access to domestic resources to expand its upstream operations abroad, primarily into nearby African hydrocarbon-producing countries. Since 2000, Sonatrach has been actively expanding its oil and gas activities abroad and aimed to have 30 percent of its activities abroad by 2015, including upstream operations in Mali, Mauritania, Niger, Libya,

¹³² "Duqm Port sees potential for cooperation on crude storage project".

¹³³ Sohar Port / Freezone.

¹³⁴ "Oman Oil Company S.A.O.C."

¹³⁵ "China Gas and Oman Oil Form Joint Venture, Set to Become Major Energy Importer in China."

¹³⁶ "Bharat Oman Refineries Limited."

¹³⁷ "Algeria," OPEC.

Egypt, Peru, and Mozambique, and downstream regasification and electricity production processes elsewhere.¹³⁸

These expansion efforts have required Sonatrach to improve its competitiveness, including through strengthening and professionalizing its management and operational processes. It has also necessitated promoting Sonatrach's foreign expertise about the countries and regions in which it operates. Sonatrach has had to resist yielding to government demand for an excessive share of its profits in order to fund these investments. Today, Sonatrach is able to use about 70 percent of its net profits to further its own activities and investments, primarily within Algeria itself.¹³⁹

8. Conclusion

It is apparent that the type of contractual arrangement that an oil-producing government chooses to use to govern its relationship with IOCs is very important, and may determine the degree to which the needs and interests of the host country can be furthered, including the extent of technology and skills transfer possible. While the capability of the host government and its NOC to undertake hydrocarbon development projects and the country's unique context are important factors in determining the optimal contractual arrangement, effective negotiation on the part of the host government may achieve similar outcomes regardless of the arrangement adopted. In all instances, it is vital that producing governments are able to control hydrocarbon developments within their countries.

Political constraints on NOC functioning frequently diminishes a NOC's competitiveness, and governments should be wary of mandating NOCs with too many non-commercial objectives. This is so particularly where NOCs are not adequately or fairly compensated for such services, as NOCs' capacity to perform and achieve both commercial and non-commercial objectives will be compromised.

There is much that NOCs in the MENA region can learn from IOCs and from other NOCs that have improved their competitiveness, both at home and abroad, through adopting more advanced technology, hiring and retaining skilled and experienced personnel, ensuring that their operational management is geared towards efficient and competitive functioning, and that their revenue management enables re-investment of sufficient funds to maintain and expand hydrocarbon production.

It is crucial that there is increased accountability and transparency in the hydrocarbon sector, both in the MENA nations and elsewhere, to empower more effective management and significant efficiency gains, and therefore greater competitiveness and productivity. Transparency is in the best interests of NOCs and governments, as well as civil society and the public more broadly, and public disclosure of relevant information enables citizens to hold their governments accountable for NOC performance.

NOCs will need to continue to reform their operations to become more competitive if they are to succeed under competitive neutrality regulations. So, too, NOCs must improve their efficiency and focus on their core mission if they wish to flourish in a globally dynamic sector and economic environment, which, from a historical perspective, will always be subject to boom and bust environments. In the coming years, diversification of NOCs, both into operations abroad and into the midstream and downstream, as well as greater vertical integration between the hydrocarbon sector and other sectors of the economy, will become increasingly important. NOCs must be ready to continually improve and re-invent themselves in order to remain relevant in this changing sector.

¹³⁸ Alvarez, "Rentierism in the Algerian economy based on oil and natural gas," 6343.

¹³⁹ Ibid. 6345.

Many of the success factors of NOCs and the potential reforms outlined in this paper have already been noted by other authors. However, it is hoped that a practitioner's perspective reiterating the importance of these aspects can nonetheless yield value. Political will is, undeniably, a crucial element in designing and driving reforms forward. If NOCs are to be dynamic commercial drivers, both at home and abroad, in an increasingly global world, political will shall remain vital for implementing the reforms needed to raise productivity, efficiency, and profitability of NOCs.

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