

ALLOCATION OF INTERNATIONAL PETROLEUM LICENSES TO NATIONAL OIL COMPANIES: INSIGHTS FROM THE COASE THEOREM

*S. Scott Gaille**

Synopsis: National Oil Companies (NOCs) are petroleum companies that are all or mostly owned by a government. NOCs, particularly those of China and India, are increasingly acquiring assets outside their own national borders, sometimes with preferential treatment from the host nation’s regulatory regime. These transactions have led to concern about whether NOCs are less efficient than privately-owned companies and therefore, whether increased NOC participation might lead to decreased global oil supply. The Coase Theorem posits that if transaction costs are low enough, it does not matter who is initially allocated licenses in a regulatory process – because the secondary market will reallocate the licenses (if necessary) to companies that can efficiently develop the underlying resources. This article analyzes, both theoretically and empirically, NOC acquisitions through the prism of the Coase Theorem and concludes that, on balance, transaction costs in the petroleum license market are not impeding the reallocation of petroleum resources and that global oil supply is unlikely to be adversely impacted by regulatory failures that might occur in the license allocation process.

I. Introduction	112
II. The Increasing Role of National Oil Companies Outside Their Home Nations	113
III. The Coase Theorem’s Application to NOC Foreign Participation	115
A. The Coase Theorem Applied to Petroleum Licenses in General.....	116
B. The Coase Theorem Applied to National Oil Company Licenses.....	118
1. Issues with Definition of Rights in Petroleum Licenses	118
2. Issues with Free Assignment of Petroleum Licenses	121
IV. Conclusion	124

* Scott Gaille is Managing Director of the Sequent Group, which includes West & East Africa Development, a company he founded in August 2007 to place private equity investments in petroleum licenses. He also teaches International Energy Development to MBA students as an Adjunct Professor at Rice University’s Jones Graduate School of Business. He received a Doctor of Law degree with high honors from the University of Chicago and a Bachelor of Arts degree with high honors from the University of Texas at Austin.

I. INTRODUCTION

NOCs are petroleum companies owned all or mostly by a government. NOCs have been acquiring large numbers of petroleum licenses outside of their own national borders, sometimes assisted by preferential treatment in which the usual regulatory processes or standards for allocating petroleum rights are not followed.¹ This has raised concerns about whether NOCs are as efficient as privately-owned companies (the IOCs), and if not, whether allocations of petroleum rights to NOCs may “stand in the way of timely resource development”² and, potentially, impact global petroleum supply.

This article puts aside the question of whether NOCs, in general, or some in particular, are more or less efficient than IOCs. Instead it focuses on what happens after a regulatory regime has awarded petroleum licenses to less efficient companies. If we assume that the regulatory process for allocating petroleum licenses has failed in this manner, what happens next? Does the “wrong” or less efficient company get to keep the right indefinitely? Or, does the right get reallocated to a company better able to exploit the underlying resources?

Nobel Prize-winning University of Chicago Law School Professor Ronald H. Coase addressed a similar problem in his analysis of the Federal Communication Commission’s allocation of frequency licenses in the 1960s.³ What happens if the government’s regulatory process initially gives the licenses to companies who are unable to exploit their maximum value? Coase argued that “whatever the initial distribution of the legal right to use these frequencies, the competitive system would, in the absence of transaction costs, bring about an optimal distribution of these rights – provided the rights were well defined and transferable.”⁴ Stated another way, where the value of the government license is high enough – which is often the case with communications spectrum and petroleum rights – the value achieved from transferring a license to a new, more efficient owner is more likely to exceed the transactions costs of the transfer and thereby enable the secondary market to overcome regulatory failures in the initial allocation. Professor Coase’s 1960 article, *The Problem of Social Cost*, further developed these principles, which became known as the Coase Theorem.⁵

The Coase Theorem’s assumptions seem to operate reasonably well in the petroleum license market. The secondary market for petroleum rights is a robust one, with 195 M&A transactions of at least \$100 million each taking place

1. See Jeffrey McCracken, Russell Gold, & William Conners, *CNOOC, Exxon Vying for Stake in Ghana Field*, WALL ST. J., Oct. 12, 2009, at B1 (describing how China NOC was exerting political influence in an effort to acquire a license that had been sold to ExxonMobil).

2. The James A. Baker III Institute for Public Policy at Rice University, *The Changing Role of National Oil Companies in International Energy Markets: Introduction & Summary Conclusions*, 35 BAKER INST. POLICY REP., at 17 (Mar. 2007) (hereinafter, *The Changing Role of International Energy Markets*).

3. Ronald H. Coase, *The Federal Communications Commission*, 2 J. L. & ECON. 1 (1959).

4. JOHAN VAN OVERTVELDT, THE CHICAGO SCHOOL: HOW THE UNIVERSITY OF CHICAGO ASSEMBLED THE THINKERS WHO REVOLUTIONIZED ECONOMICS AND BUSINESS, at 207 (2007) (summarizing Ronald H. Coase’s 1959 article “The Federal Communications Commission”).

5. Ronald H. Coase, *The Problem of Social Cost*, 3 J.L. & ECON. 1 (1960).

between 2001 and 2006.⁶ Many of these transactions involved assignments of multiple petroleum licenses. Outside of North America, more than 3,000 interests in petroleum licenses changed owners from 2000-2009.⁷ While NOCs are usually thought of as buyers, NOCs have divested licenses, as well. Non-European NOCs appeared on the petroleum interest assignment list as buyers 167 times and as sellers forty-nine times.⁸ To the extent that such reallocations can continue to occur, global petroleum supply should not be adversely affected by regulatory failures in the initial allocation.

II. THE INCREASING ROLE OF NATIONAL OIL COMPANIES OUTSIDE THEIR HOME NATIONS

Although NOCs from a variety of nations have been increasing their international investments,⁹ the bulk of NOC acquisition activity has been undertaken by a handful of Chinese and Indian NOCs. China's overseas acquisitions commenced with CNPC's purchase of Peru's Talala oil field in 1992. Since then CNPC has expanded rapidly and now "enjoy[s] business successes in a total of sixty-five projects in twenty-five countries, including Peru, Sudan, Kazakhstan, Venezuela, and Indonesia."¹⁰ Since 2002, another Chinese NOC, Sinopec, has acquired overseas oil and gas projects in "some 20 countries," including Angola, Saudi Arabia, Iran, Kazakhstan, Nigeria, Yemen, Iran, Algeria, Indonesia, and Turkmenistan.¹¹ A third Chinese NOC, CNOOC, has investments in Australia, Indonesia, Burma, Canada and the United States.¹² In 2005, it was CNOOC that captured headlines in its bid to acquire American IOC Unocal, but "[b]ecause the CNOOC offer for Unocal became severely politicized on the U.S. Capitol Hill, CNOOC had to drop the bid."¹³ Collectively, the three Chinese NOCs have acquired more than 100 international petroleum licenses in thirty-five countries.¹⁴ India also has pursued a similar strategy, with its NOC ONGC investing \$3 billion in twenty-five oil and gas properties in fifteen countries.¹⁵

These NOC acquisitions are taking place at a time when a significant geographic shift in petroleum production is taking place. While forty percent of production over the last three decades came from the industrialized west, the International Energy Agency forecasts that ninety percent of production in the

6. WOOD MACKENZIE, ACQUISITION STRATEGY AND PERFORMANCE: THE RIGHT STEPS FOR VALUE CREATION, at 7 (2007).

7. Wood Mackenzie Data Base (2000-2009) (data on assignments of petroleum field interests outside of North America of 20% or less).

8. *Id.*

9. See Robert Pirog, CRS Report for Congress, *The Role of National Oil Companies in the International Oil Market* (Aug. 21, 2007). Governments with NOC investment activity outside of their national borders include: Brazil, Russia, Japan, China, India, Angola, Indonesia, South Korea, Norway, Malaysia, and Kuwait (hereinafter, *Pirog*).

10. Dr. Xiaojie Xu, *Chinese NOCs' Overseas Strategies: Background, Comparison and Remarks*, 35 BAKER INST. POLICY REP., at 6 (Mar. 2007).

11. *Id.* at 10.

12. *Id.* at 11.

13. *Id.* at 13.

14. *Id.* at App. H.

15. *The Changing Role of International Energy Markets*, *supra* note 2, at 9.

next twenty years will come from the developing world, precisely where licenses are being increasingly allocated to NOCs.¹⁶ Amid concern that the resource balance in the developing world is tilting towards NOCs, questions have been raised whether NOCs are the most efficient agents for exploiting these new resources when profit is not their only motive.

A 2007 forum at Rice University's Baker Institute addressed this question, discussing the political demands¹⁷ placed on NOCs by their government owners,¹⁸ including: (i) petroleum wealth redistribution to society at large through employment of large numbers of people in the NOC and/or providing revenues to fund the costs of national social programs; (ii) wealth creation through industrialization and economic development, assisted by programs such as fuel subsidies¹⁹ that improve the competitive position of domestic industry; (iii) energy security and assurance of domestic fuel supply in the event of scarcity; and (iv) more general foreign and strategic policy goals.²⁰ The Congressional Research Service Report to Congress stated that such objectives "are unlikely to be equivalent to the maximization of shareholder value, the stated objective of the private international oil companies."²¹

Studies have tried to quantify the impact of the different incentives on efficiency, finding:²²

International private oil companies were near the top of the study in efficiency rankings, and the national oil companies tended to be near the bottom of the rankings. The average efficiency score in the seventy-six firm sample was 0.40. The five major international oil companies' (ExxonMobil, BP, Shell, Chevron, and ConocoPhillips) average score was 0.73, and the average for the national oil companies in the sample was 0.27.²³

If an increasing proportion of global oil and gas resources are under the control of NOC's, it is reasonable to expect that an increasing majority of oil and gas developments will be driven with political objectives in mind. Relative to a commercial outcome, this will result in inefficiencies in the production of revenues, which can manifest through lower levels of production, and higher prices, than would otherwise occur.²⁴

Some of this observed "inefficiency" of NOCs, however, appears to reflect distortions of *how* revenues from IOCs versus NOCs are spent. For example, one factor in the efficiency studies is the number of employees it takes to produce a certain number of barrels. Is the NOC "inefficient" just because it employs more people to produce the same amount of oil? Or is the NOC deliberately choosing to spend some of its revenue stream to employ more

16. *Id.* at 1-2.

17. Are these political demands that different than the demands of shareholders for dividends and share buybacks? Just as the Government owners of NOCs may demand that revenues be paid to the government, rather than invested in reserve replacement, exploration and production, so too may private owners of IOCs demand that revenues be paid to them rather than reinvested.

18. *The Changing Role of International Energy Markets*, *supra* note 2, at 2.

19. See *Pirog*, *supra* note 9, at 6. (Fuel subsidies reduce the price of gasoline in Venezuela to \$0.11 per gallon, \$0.21 per gallon in Iran, and \$0.64 per gallon in Saudi Arabia.)

20. *The Changing Role of International Energy Markets*, *supra* note 2, at 7, 9.

21. *Pirog*, *supra* note 9, at 1.

22. *Id.*

23. *Id.* at 10.

24. Stacy L. Eller, Peter Hartley, & Kenneth B. Medlock III, *Empirical Evidence on the Operational Efficiency of National Oil Companies*, 35 BAKER INST. POLICY REP., at 23 (Mar. 2007).

people as part of a social welfare program – the equivalent of paying an in-kind dividend to its government shareholder:

[n]o one can question the benefits of an NOC that can effectively redistribute oil wealth throughout a society, promote economic development, build national infrastructure or bring technical training and technologies to a nation. Clearly these tasks have economic value that is not captured in an assessment of corporate efficiency.²⁵

To the extent that NOCs are paying “in-kind” dividends to their government owners, measures of internal efficiency may offer little insight regarding whether the world will see more, or fewer, barrels of oil production if a given field is awarded to an IOC versus an NOC.²⁶

Irrespective of their relative efficiencies, the Asian NOCs are viewed as having advantages over IOCs that may enable them to obtain preferential allocations of petroleum rights from foreign governments:

the Chinese NOC's . . . play by different rules than the international oil companies (IOC's). Chinese NOC's are not constrained by the Foreign Corrupt Practices Act, by OECD guidelines on export credit competition and tied loans, or by segregation from other businesses that can be added to a package to make it more attractive, such as non-energy construction and engineering projects.²⁷

In Nigeria, Asian NOCs received a variety of preferential purchase rights and discounted bonuses in Nigerian petroleum block licensing rounds in exchange for their “commitment to invest in downstream and infrastructure projects.”²⁸ China also offered Angola a “\$2 billion loan with an interest repayment rate of 1.5 percent over seventeen years, tied to future oil production and infrastructure projects.”²⁹ In 2006, Norway's NOC Statoil “was investigated by the U.S. Department of Justice for paying \$5.2 million in bribes to influence officials in Iran to obtain a contract for the development of the Iranian South Pars gas field.”³⁰ Such examples raise the question of whether regulatory processes for allocating blocks on the basis of objective and transparent criteria are being compromised, and thereby potentially “stand[ing] in the way of timely resource development.”³¹

III. THE COASE THEOREM'S APPLICATION TO NOC FOREIGN PARTICIPATION

In his memoir, Nobel Prize winning economist George Stigler remembered a seminar organized by University of Chicago Law School professor Aaron Director at his home in 1960:

25. *The Changing Role of International Energy Markets*, *supra* note 2, at 15.

26. *Pirog*, *supra* note 9, at 2.

27. Jeffrey A. Bader, Director, John L. Thornton China Center, *The Energy Future: China and the U.S. – What the United States Ought to Do* (Feb. 8, 2006), available at http://www.brookings.edu/speeches/2006/0208china_bader.aspx?p=1.

28. Lillian Wong, *The Impact of Asian National Oil Companies in Nigeria*, NIGERIAN MUSE (Jan. 5, 2009), available at http://www.ocnus.net/artman2/publish/Analyses_12/The_Impact_Of_Asian_National_Oil_Companies_In_Nigeria_printer.shtml.

29. Matthew E. Chen and Amy Myers Jaffe, *Energy Security: Meeting the Growing Challenge of National Oil Companies*, WHITEHEAD J. DIPL. & INT'L REL., Summer/Fall 2007 at 17.

30. *Id.*

31. *The Changing Role of International Energy Markets*, *supra* note 2, at 17.

[s]cientific discoveries are usually the product of dozens upon dozens of tentative explorations, with almost as many blind alleys followed too long. The rare idea that grows into a hypothesis, even more rarely overcomes the difficulties and contradictions it soon encounters. An Archimedes who suddenly has a marvelous idea and shouts 'Eureka!' is the hero of the rarest of events. I have spent my entire life in the company of first rate scholars but only once have I encountered something like the sudden Archimedean revelation – as an observer.³²

The Eureka moment that Stigler was recalling in his memoir is the following insight:

[i]f transactions costs were zero (as is assumed in standard economic theory) we can imagine people contracting around the law whenever the value of production would be increased by a change in the legal position. But in a regime of positive transaction costs, such contracting would not occur whenever transaction costs were greater than the gain that such a redistribution of rights would bring.³³

This insight by Professor Ronald Coase of the University of Chicago Law School, which came to be known as the “Coase Theorem”, arose from his research concerning the allocation of communication licenses by the Federal Communications Commission and was elaborated in his 1960 article, *The Problem of Social Cost*.³⁴ He observed that “whatever the initial distribution of the legal right to use these frequencies, the competitive system would, in the absence of transaction costs, bring about an optimal distribution of these rights – provided the rights were well defined and transferable.”³⁵ Thirty-one years after the Director dinner, Professor Coase earned his own Nobel Prize. Just as the theorem offered a useful framework for analyzing the allocation of communication frequency licenses, so too does it have applicability to the analysis of efforts by governments to allocate petroleum licenses.

A. *The Coase Theorem Applied to Petroleum Licenses in General*

Throughout the world, petroleum basins are divided into geographic parcels, like lots in a housing subdivision. Oil and gas companies compete for the right to hold all or part of an exclusive license to explore for and develop any petroleum resources found on a particular parcel, or “block”. Governments around the world have various regulatory regimes that govern how a license for a block is allocated to oil and gas companies. These regimes range from pure auction formats, in which the highest bidder is allocated the license, to purely discretionary regimes in which a government and a company of its choosing privately negotiate the terms and conditions for the direct award of a license.³⁶

University of Chicago Law School professor Kenneth Dam studied the allocation regime for oil and gas licenses in the North Sea, which contained elements of discretion that were designed by “the British government to keep the percentage of British and Commonwealth participation as high as possible”³⁷ and ultimately “permitted about 30 per cent of the blocks to go to British interests

32. Overtveldt, *supra* note 4, at 201.

33. Ronald H. Coase, *Law & Economics at Chicago*, 36 J.L. & ECON. 251, at 250-51 (1993).

34. Coase, *supra* note 5.

35. Overtveldt, *supra* note 4, at 206-07.

36. Kenneth W. Dam, *Oil and Gas Licensing and the North Sea*, 8 J.L. & ECON 51, 58 (1965).

37. *Id.* at 66.

[including its own then-NOC, British Petroleum] and another 10 per cent to Canadian interests in the first round with the comparable percentages of the most attractive blocks perhaps being even higher.”³⁸ In doing so, “considerations of fairness and equal treatment clash[ed] with the desire to grant the scarce resource to those who will use it most efficiently and, at the same time, to favor certain applicants, in this case the British oil companies.”³⁹ Dam identified the possibility that some of the companies awarded preferential licenses may not be capable of developing them. He pointed out, though, that once awarded, the license has commercial value:

[f]rom the moment the license is granted, the licensee’s right is an item of real value which, barring legal restraints on assignment, can usually be immediately realized in cash by sale to an operating company. This will normally be true even before it is clear whether oil or gas is present; the uncertainty is merely an element of risk which tends to reduce but does not eliminate the cash value of the license.”⁴⁰

Thus, “[t]o the extent that one is concerned with applicants who intend to carry on exploitation themselves in the mistaken supposition that they have the technical and financial capacity to do so, the licensing authority . . . might trust to the self-interest of the applicant who, when he discovers his inability to exploit the resources, will find that he will earn more, or lose less, by selling the license to a competent producing company than by continuing alone.”⁴¹

Kenneth Dam’s 1974 article was written at the outset of licensing and production activities in the North Sea, and we now have thirty-five years of development hindsight. “Oil depletion rates can serve as a proxy for measuring competitive extractive behavior,”⁴² and we can look back at the oil depletion rates in the North Sea to ascertain whether the initial preferential allocation of licenses to British companies affected the efficient development of the resource, or whether, notwithstanding the initial allocations, those less efficient owners sold on to more efficient owners. In fact, oil depletion in the North Sea appears to have been robust during this period: “the British controlled regions of the North Sea held approximately 24.85 billion barrels of oil. . . . and the British have drawn down about 82.5%” of these reserves.⁴³

The development licenses in the British North Sea occurred at the same time as similar licenses were being offered in the United States Gulf of Mexico, albeit under a different regulatory regime. Whereas the British North Sea license process “experienced varying degrees of direct government involvement, including for a time participation in the sector by a state-owned oil company” and “[p]reference for British companies in licensing rounds,”⁴⁴ the United States Gulf of Mexico process “mandate[d] the use of a competitive bidding process” with considerably less discretion.⁴⁵ One commentator has observed:

38. *Id.* at 65.

39. *Id.* at 68-69.

40. *Id.* at 62.

41. *Id.* at 63, n. 33.

42. Christopher F. Richardson, *The Influence of Offshore Leasing Regimes on Commercial Oil Activity: An Empirical Analysis of Property Rights in the Gulf of Mexico and the North Sea*, 17 *GEO. INT’L ENVTL. L. REV.* 97, 118 (2004).

43. *Id.* at 120-21.

44. *Id.* at 105.

45. *Id.* at 104.

[a]pplying the Coase Theorem, one would predict that in theory private parties operating in the Gulf of Mexico and North Sea would be able to negotiate optimal arrangements for the exploration of petroleum resources and in the extract[or] of those resources. . . . [s]uch a theory suggests that commercial activity would be pursued in the same manner and with the same results (absent techn[ical] considerations) in both the Gulf and the North Sea despite the differences in leasing regimes [because] . . . [p]rivate parties . . . would simply contract around the regimes in place to achieve the optimal arrangements.⁴⁶

The empirical data supports the Coase Theory. Notwithstanding differences in the allocation systems, which might have a tendency to make one or the other of the markets more efficient, both “extracted roughly the same percentage of their total original estimated reserves,” 82.5% in the British North Sea and eighty percent in the United States Gulf of Mexico.⁴⁷

One explanation for the comparable developments is the high value of petroleum licenses, when compared to transactions costs attendant to transferring a license. Over a five year period from 2001 to 2006, there were 195 petroleum transactions in which the consideration paid for the properties exceeded \$100 million. Given the substantial value of petroleum licenses, even small differences in efficiency between two companies can result in substantial value creation that may exceed the transaction costs of transferring the license. This “high value” characteristic of many petroleum licenses likely increases the probability of licenses being reallocated to the companies best able to exploit their resources, notwithstanding differences in the allocation systems.

B. The Coase Theorem Applied to National Oil Company Licenses

As discussed earlier, NOCs have acquired hundreds of international petroleum blocks around the world, which indicates that the value attained from these transactions routinely exceeds their costs – whether it is finding buyers/sellers, discovering prices, or negotiating and contracting. That being said, Coase did identify two other circumstances that may differentially impact NOCs versus IOCs, and these are (i) the definition of rights in the license, such as the clarity of the rights being conveyed and their stability, and (ii) transferability of the rights in the license, without which the reallocations cannot take place. In both of these cases, NOCs and IOCs may have diverging incentives.

1. Issues with Definition of Rights in Petroleum Licenses

In stating his theorem, Coase explained that it was important that the rights possessed by an owner be clearly defined. This issue is particularly significant in the context of petroleum licenses. Just as the high values of petroleum licenses can mitigate the effects of generalized transaction costs, high asset values can impede transactions if the underlying rights being conveyed are uncertain. If a company is going to invest \$100 million or more in a petroleum license, it is paramount that the license (and any laws and regulations governing it) clearly state, among other things, the percentage of petroleum that the licensee is entitled to keep, and any taxes or royalties that would be owing to the government. Nor can there be any question about competing claims to the right

46. *Id.* at 111-12.

47. *Id.* at 122.

or threat that the government will confiscate the right without just compensation. Thus, petroleum transactions typically require a close analysis of how the underlying legal rights (and the government offering those rights) may affect the company's chances of recovering its investment and earning its expected return.

Examples of situations impacting the definition of petroleum rights are:

Conflict. To the extent that armed conflict is occurring or threatened in the vicinity of a petroleum license, the area may be too risky to develop. In the Cabinda enclave of Angola, a separatist movement seeking independence has disrupted petroleum activities in the onshore Congo basin for decades.⁴⁸

Takings. When a government takes petroleum assets, either through outright expropriation, or partial expropriation through changes in such fundamental terms as taxes or royalties, it casts a pall of uncertainty over all of its current and future licenses. For example, in Venezuela, the Hugo Chavez government sought to change the terms and conditions for licenses held by IOCs, resulting in ExxonMobil and ConocoPhillips "abandon[ing] their multi-billion dollar investments in the heavy oil deposits of the Orinoco basin in Venezuela" and "Total SA from France, Statoil from Norway, BP from Great Britain, and Chevron from the United States, accept[ing] agreements that raised the [NOC] share in their Orinoco projects from approximately 40% to a controlling interest of about 78%."⁴⁹

Regulatory Change. Even if the government does not specifically alter the commercial terms of a petroleum license, regulatory change can make companies reluctant to invest until the process is complete and its effects are understood. This has recently occurred in South Africa, where the government sought to transition existing petroleum license holders from one form of petroleum right to another, resulting in companies such as BHPB postponing an important well until the process was completed.⁵⁰

Border Disputes. Where international borders are disputed, petroleum activity on either side of the disputed area is likely to be suspended until the border is resolved. For example, a border dispute between South American nations Suriname and Guyana long precluded companies from exploring for potential resources along the boundary of those nations:

[i]n June 2000, Suriname's Ronald Venetiaan administration sent gunboats to expel a rig that was drilling in the disputed area. The rig was leased by Toronto-based CGX Energy Inc. . . . on a concession award granted by Guyana. The incident brought the two finance-starved former European colonies very close to war, with both massing troops on their

48. Henrique Almedia, *Cabinda Separatists Urge Angola Vote Boycott*, REUTERS, Sept. 3, 2008, available at <http://www.alertnet.org/thenews/newsdesk/L3558131.htm>.

49. Pirog, *supra* note 9, at 1.

50. Ingrid Salgado, *BHP Halts Oil Exploration in South Africa*, ALEXANDER'S GAS & OIL CONNECTIONS, Dec 8, 2005, available at <http://www.gasandoil.com/goc/company/cna54967.htm> ("BHP Billiton has postponed what would have been South Africa's first deep-water oil exploration well amid claims by oil companies of uncertainty in mining legislation over taxes and royalties.").

borders and⁵¹ allowing military aircraft to over-fly each other's airspace

Questionable Sovereignty. Sometimes it is not clear which government is responsible for licensing a particular area within a nation. This problem has occurred recently among areas that have declared independence from Somalia, such as Somaliland.⁵² In such cases, companies are unlikely to make a substantial investment because the existence of such a license may depend upon the breakaway government being recognized.

Political Disputes. Governments may issue sanctions against one another precluding petroleum investment by its nationals. The United States sanctions in Iran and Libya are examples.⁵³

In the above examples, how does the participation of one or more NOCs from other countries either increase or decrease the likelihood that petroleum resources impacted by uncertainty will be developed?

The NOC may be in a better position to assume the risk of uncertainty than a private company. For example, an NOC may have a longer time horizon than an IOC whose investors are looking for a return on their investment in a period of months or a few years. An NOC may be able to take the longer-term view and be willing to wait many years for the circumstances to improve. The NOCs explicit governmental status might also provide them with some additional insurance against expropriation risk.⁵⁴

There is evidence that NOCs are pursuing exactly this long-term strategy in their acquisition practices. The Wood Mackenzie study documented how the Asian NOCs had paid less than the average price per barrel for reserves, when compared to other transactions occurring at the same time, because many of the assets they were acquiring were burdened with the types of risks described above.⁵⁵ Asian NOC acquisitions were made at attractive prices in Ecuador, where the government had recently assumed control over Occidental Petroleum's oil fields,⁵⁶ and in Kazakhstan, where political issues with Russia were delaying the capacity expansion of the CPC oil pipeline.⁵⁷ Asian NOCs also have been active in nations such as Uzbekistan, Sudan and Burma, "where

51. Bert Wilkinson, *Suriname-Guyana: Maritime Settlement Sparks Oil Rush* (Sept. 21, 2007) available at <http://ipsnews.net/news.asp?idnews=39358>.

52. *Somalia: Swedish Explorer Lundin Petroleum Sets Eyes on Somaliland*, GAROWE ONLINE, Feb. 13, 2008, available at <http://allafrica.com/stories/200802140062.html>.

53. KENNETH KATZMAN, CRS REPORT FOR CONGRESS: THE IRAN SANCTIONS ACT (Oct. 12, 2007).

54. IOCs with implicit government backing may have a similarly strong position. For example, after the government of Ecuador expropriated Occidental Petroleum's assets, the United States government "immediately killed further discussions on the stalled free trade agreement." Michael Lettieri, *Ecuador Breaks with Washington over Occidental Petroleum*, COUNCIL ON HEMISPHERIC AFFAIRS (May 19, 2006) available at <http://www.coha.org/ecuador-breaks-with-washington-over-occidental-petroleum/>.

55. Wood Mackenzie, *supra* note 6, at 24.

56. *Id.* Ecuador Cancels an Oil Deal with Occidental Petroleum May 19, 2006 available at http://manyhues.gnn.tv/blogs/15448/Ecuador_Cancels_Oxy_s_Oil_Contract..

57. Wood Mackenzie, *supra* note 6, at 24; Vladimir Afanasiev, *Russia Tightens Screws on CPC, Upstream* (Dec. 5, 2006).

most private commercial interests are unwilling to invest.”⁵⁸ As Wood Mackenzie explained, “For such assets there’s likely to be reduced demand from the international oil companies and thus the prices bid will be lower than for comparable assets elsewhere.”⁵⁹ In Wood Mackenzie’s view, these acquisitions reflected the Asian NOC’s willingness to assume certain above ground risks.

Such behavior, in the aggregate, may actually increase global petroleum supply because assets that might not have been developed by privately-owned companies are developed by NOCs.⁶⁰ The U.S. Department of Energy has even acknowledged that “one often overlooked benefit of China’s dealings with countries in which US companies are either unwilling or unable to invest [is] that ‘these actions may actually enlarge the total global oil supply’”.⁶¹

2. Issues with Free Assignment of Petroleum Licenses

While NOCs have successfully acquired a large number of petroleum licenses outside of their host nations, there is the related question of whether, once acquired, the usual metrics of reallocation apply to NOCs in the same manner as they apply to IOCs. What if an NOC’s government imposes explicit or implicit prohibitions on the divestment of petroleum licenses once they are acquired by its NOC? If the government-owner of an NOC simply wishes to control resources for future supply, NOCs may have an incentive to hold petroleum licenses that they may not be capable of developing efficiently, either technically or financially.

Although NOCs are predominately the buyer in recent petroleum license transactions, they also have been sellers. International license assignments involving non-European NOCs from 2000-2009 show NOCs as the seller about a quarter of the time.⁶² Even the large Asian NOCs, such as CNOOC, CNPC, and ONGC, have divested interests in the last ten years.⁶³

Notwithstanding an incentive for NOCs to possibly hold licenses, the NOC’s performance is being evaluated by the host country, and the host country has its own set of incentives. The desire of host countries to develop their resources efficiently is usually addressed in the terms and conditions of the petroleum licenses, the regulatory regime and the petroleum law. Petroleum licenses typically contain terms that require the holder to accomplish certain petroleum operations in accordance with a specified schedule. If the foreign NOC finds itself in breach of these obligations, or otherwise fails to perform technically or financially, the NOC’s license may be revoked, or it may be forced to divest its license to another company. The NOC also may be precluded

58. United States Department of Energy, Section 1837: National Security Review of International Energy Requirements, at 28 (Feb. 2006), <http://www.pi.energy.gov/documents/EPACT1837FINAL.pdf>, last visited on Nov. 24, 2009.

59. Wood Mackenzie, *supra* note 6, at 24.

60. Even if the NOCs do not immediately proceed with development of these types of assets, it seems that no more harm is done than if private companies did the same. Moreover, the acquisitions of these assets from private companies may provide a further benefit to the industry of increased liquidity, in that the proceeds received by the previous owners might be deployed in projects elsewhere in the world.

61. Stephanie Kirchgaessner, *China’s Oil Scramble ‘Does Not Damage US’*, FINANCIAL TIMES, Feb. 7, 2006, available at http://www.ft.com/cms/s/0/c6b69f52-980d-11da-816b-0000779e2340.html?nclick_check=1.

62. Wood Mackenzie Data Base (2000-2009), *supra* note 7.

63. *Id.*

from participation in future licenses in that country (and perhaps even in other nations if its reputation is harmed).

The Asian NOCs do not appear to have escaped these consequences. When they have failed to live up to their financial or technical commitments, their host governments have been quick to cancel, or demand the return of, their petroleum licenses:

In Nigeria, an April 2006 agreement in which China would have paid \$2 billion for first access to four oil blocks was canceled. A similar agreement that involved CNOOC, the state-owned Chinese oil company, fizzled out. . . . [And b]ecause four of CNOOC's six oil blocks proved too difficult to explore, the company returned them to the Kenyan government, which graciously took them back last July.⁶⁴

Just because an NOC has the backing of its own government does not mean its host government – even in developing nations in Africa that are in need of foreign trade and assistance – will not have a strong incentive, and the political strength, to reallocate the license in the event of failure:

[a] report by the Royal Institute of International Affairs at Chatham House catalogues the errors of state-owned and private oil companies from China, India, Japan and South Korea attempting to negotiate the politics of Africa's two principal oil producers, Nigeria and Angola. . . . "Neither Nigeria nor Angola fits the stereotype of weak African states being exploited by hungry Asian tigers."⁶⁵

Moreover, developing nations have the capability to reallocate licenses from failing NOCs to succeeding NOCs. In December 2008, "the Nigerian government revoked the allocation of two valuable offshore oil blocks that had been awarded in 2005 to South Korea's national oil company, KNOC, on the grounds that it had not paid the full signature bonus."⁶⁶ The KNOC case also illustrates how developing nations have the capacity to "play" foreign NOCs against one another if one is perceived to not be performing, in this case, with the Nigerian government "promptly offer[ing] the two blocks to India."⁶⁷ In Angola:

India's state-owned Oil and Natural Gas Corporation (ONGC), had hoped to buy Shell's 50% share in [Angola] Block 18 and cut a deal with Shell in April 2004, but [Angola] blocked it by exercising its pre-emption right. . . . A senior Angolan official put it more bluntly: 'They made a big mistake by not consulting Sonangol [the Angola-owned regulatory authority] early on but talking directly [and] negotiating with Shell – they completely misunderstood Angolan politics.' [Further,] India's offer of US\$310 million for infrastructure development could not compete with \$725 million from China, and the [Chinese] Sinopec Sonangol International joint venture (SSI) took over the concession.⁶⁸

64. Serge Michel, *When China Met Africa*, FOREIGN POLICY (May/June 2008) available at http://www.foreignpolicy.com/users/login.php?story_id=4259&URL=http://www.foreignpolicy.com/story/cms.php?story_id=4259&page=0.

65. Tom Burgis, *Asian Bid for African Oil Being Exaggerated, Says Study*, FINANCIAL TIMES, Aug. 10, 2009, at 4; see also Jeffrey McCracken, *CNOOC, Exxon Vying for Stake in Ghana Field*, WALL ST. J., Oct. 12, 2009, at B1 ("Chinese companies have had a mixed record in Africa recently. . . . Libya vetoed a \$462 million bid by China National Petroleum Corp. for Verenex Energy, Inc., an independent company focused on exploration in the north African nation. And Angola's state-owned oil company said it would block the sale of a 20% stake in an oil field held by Marathon Oil Corp. to Cnooc").

66. Alex Vines, Lillian Wong, Markus Weimer & Indira Campos, *Thirst for African Oil: Asian National Oil Companies in Nigeria and Angola*, CHATHAM HOUSE REPORT, August 2009, at 2.

67. *Id.*

68. *Id.* at 38.

Such incidents reflect the “growing competition between China” and other Asian nations, “or indeed between rival Chinese companies.”⁶⁹ A developing nation that becomes unhappy with an NOC’s license performance thus not only has the option to shift a petroleum license to an IOC but can allocate it either to an NOC from another nation or a different NOC from the same nation. Thus, NOCs are clearly competing against one another, as well.

As with IOCs, the results being achieved by various NOCs vary considerably. Wood Mackenzie’s 2001-2006 study calculated IRRs achieved on acquisitions by thirty-eight companies, including eight NOCs, over a five-year period from 2001-2006.⁷⁰ Its data showed that NOC performance was spread fairly evenly across the range of companies studied. Chinese NOC CNPC achieved the highest returns of any of the thirty-eight companies in the study, and six of the eight NOCs were in the top half of the performance rankings.⁷¹ The focus of this Wood Mackenzie study on the economic performance of acquisitions, which are generally outside of the NOC’s home nation, arguably provides a better proxy for NOC performance on their foreign licenses than previous studies. Earlier studies that focused on company-wide metrics are more likely to be distorted by the NOC’s home nation activities and/or how NOCs allocate their revenues differently than IOCs.

Interestingly, Chinese NOC CNOOC, which has been identified with certain troubled projects in Africa, was in the bottom half of the Wood Mackenzie performance rankings, with an IRR of about half that of Chinese NOC CNPC. In contrast to the problems that CNOOC has encountered in some of its licenses, there have been reports of CNPC performing well on its international projects. CNPC took over Peruvian Blocks 6 and 7 in the wake of ExxonMobil and achieved notable increases in production and demonstration of “its enhanced oil recovery (EOR) expertise and Chinese technical skills.”⁷² In Sudan, CNPC has demonstrated success as operator of the Greater Nice Petroleum Operating Company, which “[t]hrough a sizable exploration and development campaign that was enhanced by a series of geophysical breakthroughs” has achieved “more than 226,000 b/d as a result of an increase in recoverable oil reserves.”⁷³ In Kazakhstan, CNPC took over the Aktobe field and has achieved “better performance and higher return[s]” leading to production of 120,000 b/d, or “double its initial output.”⁷⁴ In Venezuela, CNPC has applied EOR expertise and technology to the Intercampo and Caracoles oilfields, achieving “impressive development breakthroughs” that resulting in production reaching 40,000 b/d, three times higher than the pre-CNPC take-over.⁷⁵

Performance does appear to matter, even for NOCs. Once in possession of a petroleum license, the NOC, just like an IOC, will be expected to perform the financial and technical obligations that were the condition of the right, and its

69. *Id.* at 4.

70. Wood Mackenzie, *supra* note 6, at 15.

71. *Id.*

72. Xu, *supra* note 10, at 6.

73. *Id.*

74. *Id.*

75. *Id.* at 8. The divergence of these companies’ performance is further evidence that the way in which governments use petroleum revenues from its NOCs (e.g., employment and subsidy programs) does not necessarily correlate with efficient (or not) development of petroleum resources outside their home nations.

failure to do so will likely result in the license being reallocated to another company.

IV. CONCLUSION

An analysis of the petroleum rights market through the prism of the Coase Theorem indicates that the market for international petroleum licenses is generally one in which the transactions costs are lower than “the gain that such a redistribution of rights would bring.”⁷⁶ In fact, NOC participation in petroleum licenses outside of their borders may actually lead to increased oil supply due to NOCs apparently being more willing to bear certain risks than privately-owned IOCs. While NOCs may have an incentive to hold onto licenses despite poor performance, the host governments have a strong counter-incentive, and in fact have successfully reallocated licenses from poorly performing NOCs. Thus, notwithstanding regulatory failures in the allocation of petroleum licenses, the actions by the host governments to reallocate licenses and the existence of a secondary market for such licenses appear to mitigate concerns that global oil supply will be adversely impacted by increased NOC participation in the international arena.

76. Coase, *supra* note 5, at 251.