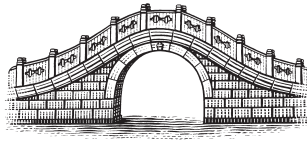


RESEARCH NOTE

The Roots of Chinese Oil Investment Abroad

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KEYWORDS: CHINA; OIL; NATIONAL OIL COMPANIES (NOC); ENERGY SECURITY; ECONOMIC POLICY; FOREIGN POLICY

EXECUTIVE SUMMARY

This article examines the confluence of domestic factors, both economic and political, that shape the behavior of Chinese oil companies abroad and the implications for energy security in China and the rest of the world.

MAIN ARGUMENT

- Enterprise reform, price liberalization, and the introduction of management incentives and competition have greatly fostered the modernization and marketization of China's petroleum industry. These factors have also blurred the relationship between the oil companies and the government that owns and regulates them.
- Though Beijing actively encouraged overseas investment in the past, the companies are taking the lead today, shaping policy to suit economic interests.
- The international competitiveness of Chinese firms stems less from overt government support than from a higher risk threshold and a willingness to accept lower returns on investment.
- Because little of the oil Chinese companies produce abroad comes home and human and political costs of supporting the firms' activities overseas are growing, leaders in Beijing are actively debating the merits of China's "going out" strategy.

POLICY IMPLICATIONS

- The U.S. would benefit more by focusing on the incentives facing individual firms than by focusing on policy pronouncements from Beijing.
- "Equity agreements" signed by Chinese oil companies look largely the same as those signed by international oil companies. These agreements, however, do not impact U.S. energy security regardless of whether the oil is shipped to China or sold on the open market.
- Rather than seeking to prevent Chinese firms from competing in the international oil market, the U.S. may find it more beneficial to encourage the companies' continued reform so that they more closely resemble the international oil majors.
- The U.S. will find some policymakers in China interested in seeing such reform take place. Yet for China to comfortably depend on the open market, the U.S. will have to demonstrate that it is a reliable partner in ensuring the security of the market for all participants.

On March 18, 2007, at a demonstration in New York City, protestors chanted “no blood for oil,” a common refrain since the beginning of the U.S. invasion of Iraq. Yet on this particular day the activists gathered near the United Nations Secretariat were not protesting the U.S. war in the Middle East but the activities of Chinese oil companies in Sudan and the reluctance of the Chinese government to endorse sending a UN peacekeeping force to Darfur. The following week actress and UN Goodwill Ambassador Mia Farrow, in a *Wall Street Journal* op-ed, took aim at the “one thing that China may hold more dear than their unfettered access to Sudanese oil” by calling on sponsors of the 2008 Olympics to pressure Beijing to change course.¹

Criticism of Chinese involvement in Sudan’s oil sector adds to mounting anxiety over the implications of investment by Chinese oil companies abroad. From the aborted bid by the China National Offshore Oil Company (CNOOC) to acquire California-based Unocal in 2005 to the work of China National Petroleum Corporation (CNPC) in Venezuela, the international endeavors of China’s national oil companies (NOC) are making headlines, sparking congressional hearings, and changing the competitive landscape of the oil and gas industry. Policymakers in the United States and elsewhere are voicing concerns that Chinese NOC investments impinge on the energy security of other countries; international oil companies (IOC) are questioning the terms on which those investments are financed; and development agencies are fretting over the impact of the money on the political health of the recipient countries.

Yet while a great deal of attention has been focused on the behavior of Chinese oil companies overseas, less is known about the structure and evolution of the oil and gas industry within China, the incentives and constraints facing NOC management, and the relationship between the companies, the government, and the policymaking process. Awareness of the domestic market and policy context in which China’s NOCs operate is essential for understanding what drives these companies to invest overseas, the targets of such investments, and how the investments are carried out. This article makes four main points. First, enterprise reform, price liberalization, and the introduction of management incentives and competition have greatly encouraged the modernization and marketization of China’s petroleum industry; yet at the same time these factors have also blurred the relationship between the oil companies and the government that owns and regulates them. Second, though Beijing actively encouraged overseas investment in

¹ Ronan Farrow and Mia Farrow, “The Genocide Olympics,” *Wall Street Journal*, March 28, 2007.

the past, the companies are taking the lead today and are shaping policy to suit economic interests. Third, Chinese firms' competitiveness overseas stems less from overt government support than from a higher risk threshold and willingness to accept lower returns on investment. Fourth, given that little of the oil Chinese NOCs produce abroad comes home, and that the cost of supporting the firms' activities overseas in terms of human lives and political influence is growing, leaders in Beijing have begun actively debating the merits of a "going out" strategy.

The article is organized as follows:

- ≈ pp. 144–51 overview the evolution of China's oil sector and examine the current relationship between the NOCs and the government
- ≈ pp. 151–61 address Chinese oil firms' motives and strategies and examine the companies' execution of overseas investment
- ≈ pp. 161–66 respond to four prevalent concerns regarding China's NOCs and assess the implications for China and the United States

FROM MINISTERS TO MANAGERS: THE EVOLUTION OF CHINA'S NOCS

Unlike its neighbors in East Asia, China has had a robust domestic oil and gas industry for several decades. An oil boom in the late 1960s and early 1970s turned China into the world's fourth largest producer outside the Middle East—a title that the country still holds today.² With a decade of 20% annual output growth and oil prices at all-time highs, in the late 1970s Beijing harbored ambitions of becoming the "Saudi Arabia of the East" and planned to finance China's modernization with a bounty of oil riches.³

In 1978–79 prospectors drilled over fifteen million meters of new wells in an attempt to increase oil production from two to five million barrels per day (mbd) but found only one new field. As a result, oil output nationwide expanded at a rate of less than 3% per year over the next decade. Not only were plans to build the country's future on the back of oil completely abandoned, but production struggled to keep up with domestic demand. Beijing began to restructure the petroleum industry in an attempt to improve productivity. Until that time oil and gas production, processing, and distribution were controlled

² "Statistical Review of World Energy 2006," BP p.l.c., 2006 ≈ <http://www.bp.com/>.

³ See Barry Naughton, *Growing out of the Plan: Chinese Economic Reform, 1978–1993* (New York: Cambridge University Press, 1995); and Barry Naughton, *The Chinese Economy: Transitions and Growth* (Cambridge: MIT Press, 2007).

by two government agencies—the Ministry of Petroleum Industry and the Ministry of Chemical Industry—which allocated resources in quantities and at prices specified by input-output tables in the State Planning Commission’s economic blueprints.

In the early 1980s Beijing began to convert these ministries into the state-owned enterprises (SOE) that dominate the country’s oil sector today.⁴ CNOOC was created from the offshore assets of the Ministry of Petroleum Industry in 1982. Because the Chinese oil industry was relatively novice in this area of exploration and production, CNOOC was given the mandate to invite and cooperate with the IOCs in developing new oil and gas resources off China’s coast. The China Petrochemical Corporation (Sinopec Group) was created the following year from the downstream assets of the Ministry of Petroleum Industry and the Ministry of Chemical Industry. Sinopec was made responsible for all oil refining, marketing, and petrochemical manufacturing. The remaining onshore upstream oil and gas production activities were folded into the newly formed China National Oil and Natural Gas Corporation, which became the China National Petroleum Corporation (CNPC) in 1988.⁵

Although all three of these SOEs remained under the control of the State Council (by way of the State Planning Commission), changes to their incentive and cost structures introduced by the central government as part of broader economic reforms in the 1980s and 1990s affected the firms’ behavior as corporate entities in important ways. First, a twin pricing system permitted the companies to sell at market prices any crude oil and natural gas produced in excess of the quota set by the State Planning Commission. Second, each company’s management was assigned responsibility for the firm’s balance sheet and given the ability to use performance metrics in determining employee compensation. Third, with new freedom to cut costs and boost profits, the three NOCs were expected to finance their own investments, either through retained earnings or bank loans. Government allocations were gradually cut off.

The introduction of limited competition and investor oversight—where previously there had been none—heightened the impact of these reforms on the performance of the country’s oil sector. In 1998 Beijing attempted to create world-scale vertically integrated oil and gas companies by forcing CNPC and

⁴ Fuqiang Yang et al., “A Review of China’s Energy Policy,” Lawrence Berkeley National Laboratory, 1995 ~ http://china.lbl.gov/publications/china_e_policy.pdf.

⁵ Ibid. For an excellent discussion of institutional change in the energy sector, see Kenneth Lieberthal and Michel Oksenberg, *Policy Making in China: Leaders, Structures, and Processes* (Princeton: Princeton University Press, 1988); and Philip Andrews-Speed, *Energy Policy and Regulation in the People’s Republic of China* (The Hague: Kluwer Law International, 2004).

Sinopec to swap some of their assets, a move that gave Sinopec a decent-sized upstream portfolio while providing CNPC with refineries and a distribution network. Then in 2000 Sinopec and CNPC created subsidiaries to list on Hong Kong's stock exchange (with U.S. depository receipts traded in New York). The initial public offering (IPO) for Sinopec Corporation (Sinopec Group's listed arm) and PetroChina Ltd. (CNPC's listed arm) raised \$3.5 and \$2.9 billion dollars respectively. In 2001 CNOOC Ltd. joined these companies and raised \$1.3 billion in its IPO. Although the state-owned parent company retained majority ownership of these subsidiaries, public listing added a new element of investor scrutiny and profit discipline to China's oil sector.

Accounting for the majority of China's 3.6 mbd of domestic production, CNPC is the fifth largest oil company in the world—larger than Exxon, BP, Chevron, or Shell (see **Table 1**). Although Sinopec is larger than CNPC in annual revenue, owing to a large refining and marketing business, Sinopec's upstream exploration and production portfolio is considerably smaller than CNPC's. CNOOC is a distant third to Sinopec and CNPC in terms of revenue and employees but pumps almost as much crude oil as Sinopec through the company's offshore operations (see **Table 2**).

Despite the fact that the “Big Three” still dominate their traditional areas of operation—CNPC, upstream and in the north; Sinopec, downstream and in the south; and CNOOC, offshore—the companies are increasingly competing for each other's market space. CNOOC built a petrochemical complex onshore, Sinopec is exploring for gas in Sichuan and oil in Xinjiang (both areas are traditionally CNPC's territory), and CNPC is planning to construct a refinery in southern China. In addition, all three firms compete with each other overseas, despite Beijing's desire for coordination.

The financial performance of the three major oil companies varies based on the market position and legacy cost structure of the companies. Upstream oil prices have been almost entirely liberalized and now closely follow global crude oil price movements. In addition, a growing share of the crude oil China consumes comes from world markets (see **Figure 1**). Downstream prices for most refined products, however, remain tightly controlled. As crude prices have risen, exploration and production have grown increasingly lucrative (with a 47% profit margin in 2006) while refining and distribution have suffered profit margins below 3% over the past ten years and lost money during the last two (see **Figure 2**). Petrochemical activities have done slightly

TABLE 1

World's Largest Oil and Gas Producers by Output, 2005

Rank	Company	Millions of barrels of oil equivalent (Mboe)
1	Saudi Arabian Oil Co.	4,148.8
2	Gazprom	3,313.4
3	National Iranian Oil Co.	1,810.7
4	Petroleos Mexicanos	1,666.2
5	PetroChina Co. Ltd. (CNPC)	1,040.5
6	ExxonMobil Corp.	983.3
7	Sonatrach	904.4
8	Kuwait Petroleum Corp.	892.4
9	Petroleos de Venezuela SA	817.6
10	Total SA	732.2
19	BP p.l.c.	485.1
23	Royal Dutch/Shell	421.9
26	ChevronTexaco Corp.	384.4
30	Sinopec	314.7
33	ConocoPhillips	281.5
38	CNOOC Ltd.	211.0

Source: IHS, Inc., January 2007.

better over the past decade, with profit margins growing from 1% to 6%.⁶ As the country's largest refiner (processing three mbd in 2006) Sinopec is hardest hit by retail price controls (see Table 2). Despite revenue of over \$130 billion in 2006, Sinopec netted less than \$9 billion (a 6.8% operating margin). CNPC, by contrast, earned \$24 billion in profit on \$112 billion in revenue (a 21.3% margin). CNPC's 2.7 mbd of oil and 48 billion cubic meters (bcm) of natural gas production more than offset both losses incurred in its refining operations, which processed over 2 mbd, and the fact that CNPC employs over twice as many people as Sinopec. With almost no downstream operations and only 37,000 employees (compared to 1.6 million and 700,000 at CNPC and Sinopec respectively), CNOOC experienced the greatest returns of the three major companies in 2006 enjoying \$16.6 billion in revenue (a 36% margin).

⁶ All profit margins are on an earnings-before-tax (EBT) basis, calculated as gross profits divided by total sales revenue.

TABLE 2
China's Big Three, 2006

	CNPC	Sinopec	CNOOC
Operating Statistics			
Crude oil production (kb/d)	2,705.0	806.0	633.0
Natural gas production (bcm)	48.0	7.2	8.8
Refinery throughput (kb/d)	2,207.0	2,938.0	N/A
Financial Statistics			
Revenue (\$b)	112.1	131.1	16.6
Operating profits (\$b)	23.9	9.0	6.0
Operating margins (%)	21.3	6.8	36.1
Employees (th)	1,589.0	730.0	37.0

Source: Company press releases and annual reports.

Note: Refers to the parent group, not the listed subsidiary. Crude oil converted at 7.33 barrels per ton. Renminbi converted at 7.97 to the U.S. dollar.

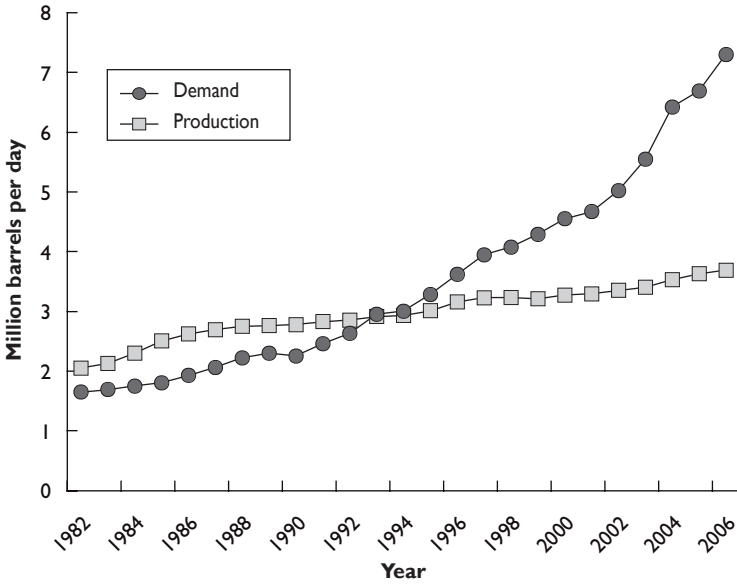
Though enterprise reform, price liberalization, and the introduction of management incentives and competition have greatly encouraged the modernization and marketization of China's petroleum industry, these factors have also blurred the relationship between the oil companies and the government that both owns and regulates them. This relationship is a key area of interest for industry analysts and policymakers outside China and the subject of significant scholarship.⁷ Below is a brief synopsis of the three primary levers—regulation, ownership, and personnel—that allow Beijing to influence NOC behavior.

Regulation

There are several government agencies with regulatory jurisdiction over the domestic petroleum industry. Upstream oil and gas extraction licenses are issued by the Ministry of Land and Resources. New refineries or chemicals factories of any significant size must be approved by the energy and industry

⁷ See in particular Erica S. Downs, "China," Brookings Institution, Energy Security Series, 2006; Kenneth Lieberthal and Mikkal Herberg, "China's Search for Energy Security: Implications for U.S. Policy," *NBR Analysis* 17, no. 1, 2006; Steven W. Lewis, "Chinese NOCs and World Energy Markets: CNPC, Sinopec and CNOOC," James A. Baker III Institute for Public Policy, Rice University, Baker Energy Forum, March 2007; and Xiaojie Xu, "Chinese NOCs' Overseas Strategies: Background, Comparison and Remarks," James A. Baker III Institute for Public Policy, Rice University, Baker Energy Forum, March 2007.

FIGURE 1

China's Growing Import Dependence

Source: "World Energy Statistics and Balances 2007," International Energy Agency <http://www.iea.org>; data from China's National Bureau of Statistics and the China Petroleum and Chemical Industry Association provided by CEIC statistical service accessed through ISI Emerging Markets, 2007; and author's calculations.

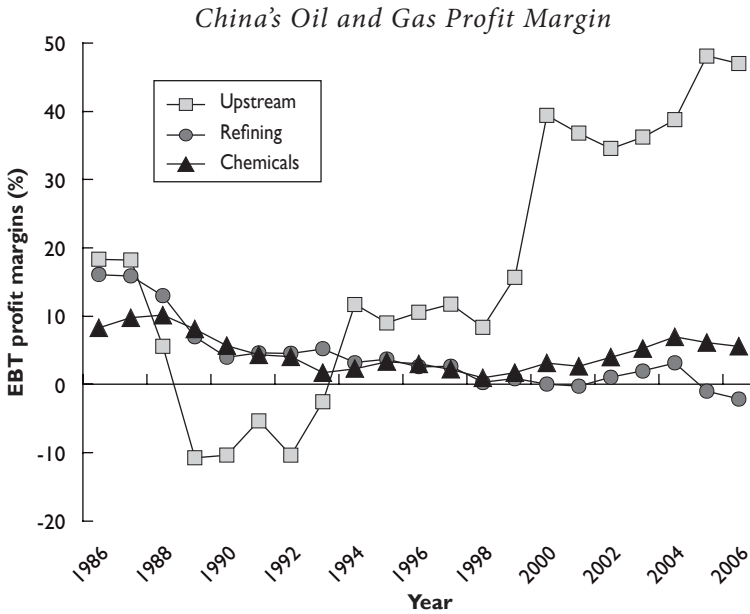
bureaus of the National Development and Reform Commission (NDRC) and are subject to the State Environmental Protection Agency's (SEPA) Environmental Impact Assessment (EIA). The NDRC's price bureau sets gasoline and diesel prices, and the Ministry of Finance collects a windfall profits tax on upstream oil extraction (and would administer a tax on fuel consumption, if one is ever imposed).

Ownership

At the group level (as opposed to the listed subsidiaries) CNPC, Sinopec, and CNOOC are owned by "the people," who are represented by the State-owned Assets Supervision and Administration Commission (SASAC) as the majority shareholder.⁸ To date, SASAC has been a relatively passive "owner," as the commission has little control over the companies' investments

⁸ Barry Naughton, "SASAC Rising," *China Leadership Monitor*, no. 14, Spring 2005.

FIGURE 2



Source: Data from National Bureau of Statistics provided by CEIC statistical service accessed through ISI Emerging Markets, 2007.

or managerial staff. In a normal corporation shareholders exercise capital discipline through their right to company earnings in the form of dividends. As majority shareholders of their Hong Kong-listed subsidiaries—which are heavy on high-performance assets and light on legacy expenses—the major Chinese companies collect regular dividends from the listed arms and use these profits to offset losses elsewhere in their groups. These groups are not required to extend the same courtesy, however, to their shareholders: the people.⁹ The resulting accumulation of such undisciplined capital shapes the overseas investment strategies of these firms (discussed in greater depth later in the article).

⁹ For discussion of China's dividend policy for state-owned enterprises (SOE), see Louis Kuijs, William Mako, and Chunlin Zhang, "SOE Dividends: How Much and to Whom?" World Bank, Policy Note, October 17, 2005; Weijian Shan, "The World Bank's China Delusion," *Far Eastern Economic Review* 167, no. 7 (September 2006): 29–32; and Jonathan Anderson, "The Furor over China's Companies," UBS, UBS Asian Focus, September 18, 2006.

Personnel

As the majority shareholder of the country's largest SOEs, SASAC in theory has the ability to assign company directors. In the case of NOCs, however, where the chairman has the rank of vice minister, that privilege is retained by the Ministry of Personnel (MOP). The MOP lies at the very heart of the Chinese Communist Party's political machinery. Party officials are rewarded or punished for current performance with career advancement or lack thereof. Prestigious positions at the helm of the oil majors are precious political commodities, and the party is loathe to hand over such power to the bureaucrats at SASAC. At the same time, NOC performance is too important for leadership posts to be used solely as sinecures. Political requisites must be balanced with industry expertise.

Though the power to appoint and dismiss directors enables the MOP and the party to shape industry, making corporate leadership a political position also provides industry with a seat at the table in shaping policy. In addition, the vacuum of energy expertise in government following the transition of the industrial ministries into SOEs¹⁰ leads to what Erica Downs describes as "ineffective institutions and powerful firms."¹¹ In examining NOC motives, strategies, and implementation of overseas investments, it is important to examine the role NOCs play in shaping China's energy policy and the impact of NOCs on energy markets abroad. As Downs notes, "energy projects and agendas are often driven by the corporate interests of China's energy firms rather than by the national interests of the Chinese state."¹²

MOTIVE: WHY CHINA'S NOCS "GO OUT"

As with the relationship between the petroleum industry and the government, what motivates Chinese oil companies to invest overseas is a subject of considerable research and debate.¹³ This article addresses the issue by coupling analysis of the economic incentives and regulatory constraints Chinese firms face with the companies' observed behavior overseas. Within this context the article makes several general comments regarding the elite

¹⁰ For more on this transformation, see Daniel H. Rosen and Trevor Houser, "China Energy: A Guide for the Perplexed," Peterson Institute for International Economics, May 2007.

¹¹ Downs, "China."

¹² *Ibid.*, 16.

¹³ See Erica S. Downs, "The Chinese Energy Security Debate," *China Quarterly* 177 (March 2004): 21–41; Downs, "China"; Lieberthal and Herberg, "China's Search for Energy Security"; Xu, "Chinese NOCs' Overseas Strategies"; and Lewis, "Chinese NOCs and World Energy Markets."

dialogue occurring in Beijing policy circles as to whether such foreign investment serves China's national security goals.

As discussed above, liberalized upstream oil prices and controlled retail gasoline and diesel prices have wreaked havoc on the balance sheets of CNPC's and Sinopec's downstream operations. In response, both companies have sought to expand their domestic exploration and production portfolios, particularly in natural gas. Sinopec has been the most successful in this regard; significant gas discoveries in western China helped to offset the firm's refinery losses. Both companies have, however, also attempted to improve the economics of refining through political clout and dominant market position.

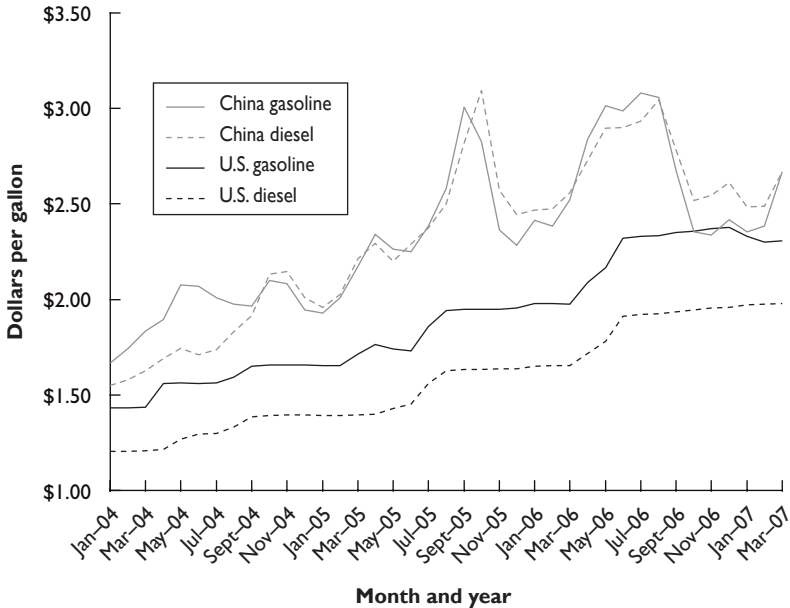
Between 2003 and 2006 both the volume of China's crude oil imports and the price per barrel for that crude doubled. Because refiners were unable to pass on that cost increase to consumers, the downstream sector began hemorrhaging money—\$5 billion in losses in 2006 alone.¹⁴ Sinopec and CNPC did not sit idly by while their balance sheets were destroyed; rather, the companies began applying pressure on the NDRC to let them charge more for gasoline and diesel. When refining margins drastically deteriorated in the spring of 2006, the major companies cut crude runs to stave off losses. Before long, reports of queuing at gas stations and farmers unable to buy diesel for their tractors were filling the press. Forced to choose between the certainty of citizens angry over shortages and the possibility of citizens becoming angry over higher prices, the NDRC conceded to a 15% increase in gasoline and diesel prices over the course of the next couple months (see **Figure 3**).

This domestic price dynamic is an excellent example of how solutions are brokered when government and industry interests are at odds. Fearful of passing the costs of inflation through to an increasingly automobile-oriented and vocal middle class, as well as to low-income farmers and taxi drivers, Beijing is hesitant to cave in to the NOCs' demands. At the same time, however, Sinopec and CNPC collectively employ over 2.3 million people (far more than necessary for their core business operations) and thus need to remain viable businesses to fulfill the social obligations that come with such large payrolls. In exchange for slow movement on retail prices Beijing offered Sinopec a \$647 million year-end subsidy (down from \$1.1 billion in 2005).¹⁵ CNPC was expected to use the company's \$23 billion in upstream profits to

¹⁴ Beijing Kang Kai Information & Consultancy Co. Ltd., "Refined Petroleum Products Industry Monthly Indicators," Manufacturing Industry Time Series Statistics, 2006, available through ISI Emerging Markets ~ <http://www.securities.com>.

¹⁵ "Update: Sinopec Posts 23.7% Jump in 2006 Profit to \$7.2 Billion," Platts Commodity News, April 9, 2007.

FIGURE 3

U.S. and Chinese Gasoline and Diesel Prices

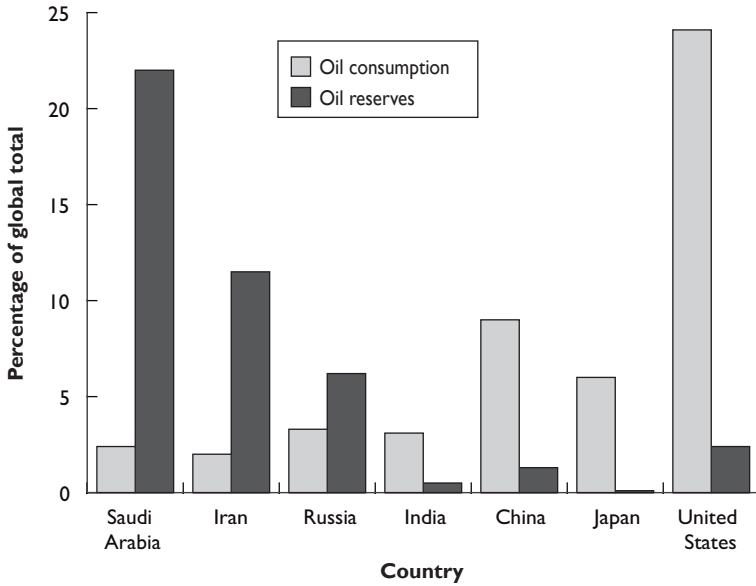
Source: “Weekly Retail Gasoline and On-Highway Diesel Prices,” U.S. Energy Information Administration http://tonto.eia.doe.gov/dnav/pet/pet_pri_gnd_dcus_nus_w.htm; data from China’s National Bureau of Statistics and the China Petroleum and Chemical Industry Association provided by CEIC statistical service accessed through ISI Emerging Markets, 2007; and author’s calculations.

offset downstream losses. In addition, the government collected a windfall tax on those profits (as well as on the upstream earnings of Sinopec and CNOOC) to compensate farmers and cab drivers for the retail price increase.

Though the NOCs have been able to raise profits by expanding their domestic upstream portfolios and lobbying for price increases, China’s proven oil and gas reserves do not promise significant future growth. Even though China accounts for 9% of global oil demand, the country possesses only 1% of the world’s proven reserves (see **Figure 4**). This low level of proven reserves, coupled with a desire to become world-class energy companies, has prompted China’s NOCs to search for exploration and production opportunities abroad. There has been significant discussion among the country’s leadership concerning the energy security benefits of increasing the share of China’s surging oil imports supplied by domestic firms producing overseas.¹⁶ Although

¹⁶ See in particular Downs, “The Energy Security Debate.”

FIGURE 4

Oil Demand and Reserves, 2006

Source: "Statistical Review of World Energy 2007," BP p.l.c. ~ <http://www.bp.com>.

this discussion may have influenced the first international forays of Chinese NOCs, it is important to note that the companies have a market incentive to invest abroad even in the absence of a government mandate.

Moreover, in recent years the NOCs have used their political clout to become the principal force behind a "going out" policy that furthers their economic interests. Chinese oil companies argue that increasing their overseas business bolsters China's energy security for the same self-interested reasons that U.S. corn-growers champion the cause of ethanol-based "energy independence." Although the NOCs do occasionally make investments for political rather than economic reasons, business considerations rather than policy directives motivate the majority of their investments. There are some instances where the best return on the company's investment would be in overseas production, but Beijing urges firms to continue pumping assets into mature and expensive fields at home in an attempt to keep domestic production from declining.¹⁷ A critical examination of where Chinese NOCs

¹⁷ Based on the author's conversations with Chinese petroleum industry insiders, Beijing and Shanghai, January and February 2007.

invest, obtain financing, and sell their oil confirms that the companies, far more than the government, are taking the lead overseas.

STRATEGY: WHERE AND HOW TO INVEST ABROAD

The level of overseas investment by Chinese oil and gas companies has grown significantly in recent years, though the amount still pales in comparison to the investments of major U.S. and European oil companies. Sinopec, CNPC, and CNOOC have invested in exploration and production assets in over 30 countries around the world but are currently producing oil in fewer than half of these countries (see **Table 3**). In deciding where to invest abroad the NOCs make decisions primarily on commercial grounds and consider three main factors: technical capabilities, competition from IOCs, and political and security risks.

The profile of the refinery stock in China—largely geared toward the low-sulfur (sweet) and high API gravity (light) crude oil found in the northeast of the country—heavily influenced the selection criteria for the NOCs' first few overseas forays. As production from fields like Daqing lagged demand, Chinese firms looked elsewhere for similar crudes which could be processed using existing refining capacity. Some of the NOCs' initial overseas investments, such as those made in Sudan, were in fields producing this type of oil. Even now China opts more often for the sweet, light crudes produced in West Africa and Southeast Asia when purchasing oil on the open market than for the high-sulfur oil from the Middle East (see **Figure 5**).

In recent years the profile of China's refinery stock has become less important to the NOCs as a criterion in selecting overseas investments. Refining capacity in China has expanded, allowing Chinese companies to refine various types of crude oil. Furthermore, Chinese oil companies are no longer exclusively focused on bringing their overseas production home (as discussed below) but have developed sophisticated trading operations to help maximize profit per barrel produced regardless of the oil's final destination.

Today Chinese oil companies are more constrained in their selection of blocks on which to bid by the technical capabilities they can bring to upstream exploration and production. The firms are quite adept when confronting the same types of geological structures they work with at home. Some of these structures (such as complex faulted block reservoirs and certain heavy oil deposits) present formidable challenges to competing companies and thus

TABLE 3

Global Presence of Chinese Oil Companies, 2006

	CNPC	Sinopec	CNOOC
Africa			
Countries invested in	9	6	3
Producing oil in	3	3	0
Total equity production (kb/d)	225	40	0
Middle East			
Countries invested in	4	4	0
Producing oil in	3	1	0
Total equity production (kb/d)	40	1	0
Former Soviet Union			
Countries invested in	4	3	1
Producing oil in	3	2	0
Total equity production (kb/d)	220	10	0
East and Southeast Asia			
Countries invested in	4	2	3
Producing oil in	3	0	2
Total equity production (kb/d)	20	0	25
North and South America			
Countries invested in	5	3	1
Producing oil in	3	2	0
Total equity production (kb/d)	55	45	0

Source: Author's estimates based on conversations with oil company officials and market analysts.

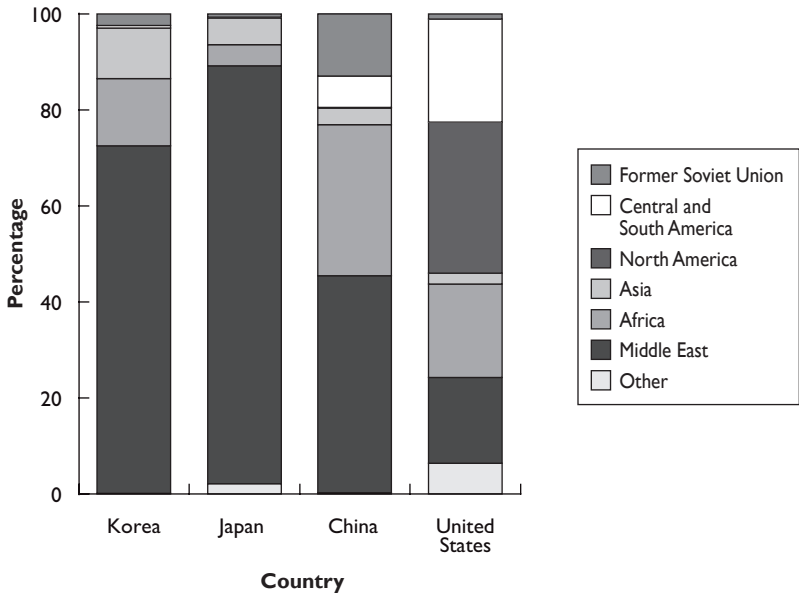
Note: Values for East and Southeast Asia exclude China.

provide Chinese NOCs with an advantage in bidding on certain projects.¹⁸ Yet in other areas, such as deep offshore drilling, Chinese NOCs face a significant disadvantage vis-à-vis the IOCs. This lack of offshore drilling capabilities creates a problem for Chinese competitiveness given that much of the acreage available for bidding in oil-rich countries is located offshore.

The lack of offshore drilling capabilities also means that Chinese firms are forced to operate in areas of greater political risk than their IOC peers. Without the technical prowess to bid on big blocks in deep water, the Chinese NOCs must settle for smaller-scale onshore operations, which are vulnerable

¹⁸ The author would like to thank K.F. Yan at Cambridge Energy Research Associates for this point.

FIGURE 5

Oil Imports by Region

Source: "U.S. Imports by Country of Origin," U.S. Energy Information Administration \approx http://tonto.eia.doe.gov/dnav/pet/pet_move_impcus_a2_nus_ep00_im0_mdbl_m.htm; data from China General Customs Administration provided by CEIC statistical service accessed through ISI Emerging Markets, 2007; "Trade Statistics of Japan," Ministry of Finance \approx http://www.customs.go.jp/toukei/info/index_e.htm; and UN Comtrade Database, United Nations Commodity Trade Statistics Department \approx <http://comtrade.un.org>.

to such hazards as kidnappings and attacks. To gain access to large concessions within their technical range, the NOCs have sought out countries where the IOCs are either legally barred or refuse to operate (e.g., Sudan, Iran, and Syria). Traditionally Chinese NOCs have been less worried about public perceptions associated with such investments, although both CNPC and Sinopec have chosen to keep their most sensitive operations under the auspices of their parent group companies rather than the firms' publicly traded subsidiaries. Having yet to endure a loss of assets following a regime change in any country in which they operate, Chinese NOCs also attach a lower risk premium to investing in locations with unstable governments.

The NOCs' lack of concern regarding political and security risks may be changing. Chinese investments in Sudan and Iran are drawing increased attention and pointed criticism from the international community. Some in Beijing, particularly in the Ministry of Foreign Affairs, are concerned that China is squandering its hard-won "soft power" every time the country

defends Sudan in the UN Security Council. In addition, Chinese operations have begun to experience the kind of security challenges that have led Western companies to demand a higher return on investment. In the first quarter of 2007 the same groups protesting the activities of Western IOCs kidnapped sixteen Chinese oil workers in Nigeria.¹⁹ Then in April an attack on a Sinopec oil field in Ethiopia killed at least nine Chinese workers (along with more than sixty Ethiopians) and another six were taken hostage.²⁰

Another reason why Chinese firms have sought to expand their upstream businesses through risky exploration and production is because of the companies' inability to grow through mergers and acquisitions. CNOOC's failed attempt to purchase California-based Unocal in 2005 has had a marked impact on the psyche of all three Chinese NOCs. CNPC, Sinopec, and CNOOC today see greater risk in bidding for U.S. and European energy firms than in drilling for oil in Sudan or Iran, despite the rising political and security costs of operating in these countries.²¹

EXECUTION: FINANCING AND FACILITATING OVERSEAS DEALS

Once the NOCs have chosen where overseas to operate, how the companies make their investments is an issue of interest to both business leaders and policymakers. The IOCs have voiced concerns that the playing field is not level; the Chinese firms, IOCs argue, enjoy government support—both diplomatically and financially—not available to publicly traded Western companies.

As mentioned above, understanding the relationship between Beijing and the oil companies is complicated. The division between state-owned parent companies and publicly traded subsidiaries and the peculiarities of the Chinese financial system cloud the picture of NOC financing and the degree of government involvement. The picture also varies dramatically by company. For the 2005 Unocal bid, CNOOC Ltd. lined up \$7 billion in financing from its parent company (CNOOC Group) that was augmented by a \$6 billion

¹⁹ "Foreign Ministry Spokesman Liu Jianchao's Regular Press Conference on March 20, 2007," Ministry of Foreign Affairs of the People's Republic of China ~ <http://www.fmprc.gov.cn/eng/xwfw/s2510/t305261.htm>; and Edward Cody, "China's Expansion Puts Workers in Harm's Way," *Washington Post*, April 26, 2007.

²⁰ "Ethiopia Blames Eritrea for Attacks on Chinese-owned Oil Field," Dow Jones Commodities Service, April 25, 2007.

²¹ Based on the author's conversations with officials in the overseas units of CNPC and Sinopec, Beijing, January and February 2007.

bridging loan from the Industrial and Commercial Bank of China.²² Critics argued that the cost of both sources of financing was artificially low and put competitors at a disadvantage. Although Chinese oil companies may enjoy a capital cost advantage over their IOC competitors, the Unocal case is not representative of most Chinese firms' overseas investments and thus serves as a poor case study.

In most cases Chinese oil companies do not need external capital—whether from parent companies or the bank—to finance overseas investments. The Unocal acquisition was by far the largest foreign investment ever attempted by a Chinese company, and it was attempted by the smallest of the three Chinese majors. At \$18.5 billion the deal was half of CNOOC Ltd.'s entire market capitalization and more than double the subsidiary's annual revenue. Though CNOOC Ltd. had to borrow heavily to make the deal, CNPC, the largest of the three, could have bought Unocal outright with the firm's 2006 profits alone.²³ Additionally, given that most of CNPC's overseas investments are considerably smaller than the Unocal deal (\$200 million exploration blocks rather than \$20 billion acquisitions) the company rarely goes to the bank to finance overseas activities.

CNPC instead relies on retained earnings—the vast profits that have resulted from rising oil prices but are not subject to shareholder discipline. When an IOC, such as BP or Chevron, cannot deliver double-digit returns on reinvested earnings, then that company's shareholders generally prefer to take their profit as dividend payments in order to invest in a company that can provide higher returns. Like all SOEs, however, CNPC is not required to pay a dividend to its shareholders (i.e., the government), regardless of company performance. With either mature and expensive domestic production or bank deposits yielding nominal 3% as the only alternative places for the company to spend its cash, CNPC can thus apply lower rate-of-return criteria to the company's overseas investments.

Earning \$9 billion in profits in 2006, Sinopec lies between CNOOC and CNPC in the ability to self-finance overseas investment. When any of the three major NOCs do choose to go to the bank, however, there is no shortage of lenders willing to extend big loans at rates that are low by Western standards. Though there are distortions in the way interest rates are set in

²² Peter C. Evans and Erica S. Downs, "Untangling China's Quest for Oil through State-backed Financial Deals," Brookings Institution, Policy Brief, no. 154, May 2006, 3; and "Parent's Cheap Cash Underpins CNOOC Bid," *International Petroleum Finance*, July 7, 2005.

²³ Winnie Lee, "CNPC Earned \$23.85 Billion Profit in 2006, up 5.7%," *Platts Oilgram News*, January 24, 2007.

China, reforming the system could very well reduce rather than increase the cost of capital to Chinese oil companies. As of August 2007 the six-month lending rate in China was 6.2%, lower than the U.S. average but higher than the average in the UK or Japan.²⁴ In China, however, banks are not allowed to compete on interest rates, loans, or deposits. Because customers can borrow at the same rate regardless of risk, and because Chinese banks sometimes make ill-conceived loans to companies, the government maintains a comparatively high spread between deposit rates and lending rates in order to give the banks a buffer against non-performing loans. In a truly competitive financial system, however, oil and gas companies—some of the most reliable borrowers in the country—could likely see interest rates lower than at present.

Although direct government financial support is not a significant factor in overseas investment, the role of indirect support—in the form of development assistance to the host country—is less clear. In 2004 China's Export-Import Bank extended a \$2 billion soft loan to Angola for infrastructure projects. International observers claim this prompted the Angolan government to award Sinopec an oil concession at the expense of India's Oil and Natural Gas Corporation.²⁵ In 2006 Premier Wen Jiabao followed this concession with another \$2 billion infrastructure loan announced during a seven-nation African tour.²⁶

Though the Export-Import Bank's loans were likely a key factor in Sinopec's success in Angola,²⁷ the benefit of development assistance to Chinese firms more broadly, and gains from such announcements by high-level political delegations, are hard to gauge and may even be declining. There are signs that the initial enthusiasm among African leaders for Chinese investment with no strings attached has faded. Chinese funds come without preconditions, yet this funding often fails to provide many jobs to the local population. The loans to Angola, for example, require 70% of the construction work to be done by Chinese companies (which generally bring with them Chinese employees). African critics have argued that most Chinese development assistance is not about laying claim to African oil but rather providing contracts for Chinese construction companies and employment for Chinese citizens. Adding insult to injury, China often makes bilateral

²⁴ CEIC Data, ISI Emerging Markets, 2007.

²⁵ Evans and Downs, "Untangling China's Quest for Oil through State-backed Financial Deals," 3.

²⁶ Benoit Faucon, "China Makes Headway in Angola with Multiple Trade Ties," Dow Jones International News, November 30, 2006; and "China's Exim Bank Grants Angola US \$2bln Credit," China Knowledge Press, June 23, 2006.

²⁷ Erica S. Downs, "The Fact and Fiction of Sino-African Energy Relations," *China Security* 3, no. 3 (Summer 2007): 42–68.

trade agreements a precondition for financial assistance, putting existing local manufacturers under pressure to compete with Chinese imports.²⁸

IMPLICATIONS AND CONCLUSIONS

This article has attempted to explain the NOCs' behavior overseas based on an assessment of their institutional evolution, economic incentives, and their relationship with the government. The article responds to four major contentions regarding the activities of Chinese energy firms abroad: (1) that Beijing directs and coordinates the NOCs' actions to serve the government's interests, (2) that the NOCs harm the energy security of others by reducing the amount of oil on the market, (3) that the NOCs harm the economic interests of the IOC by competing unfairly, and (4) that the NOCs hurt U.S. strategic interests and development goals by disrupting existing political and economic dynamics.

The first contention is perhaps most pervasive in Washington and informs the other three. Given that Chinese oil companies are state-owned and accountable to an autocratic government increasingly concerned with energy security, it is logical to assume that there exists a tight relationship between the companies and Beijing regarding investment overseas. Yet as demonstrated in this article, the oil companies have interests of their own, often quite separate from those of the government. Though sometimes intersecting (as in the case of the loans to Angola), these interests frequently conflict (as in the struggle over domestic fuel prices and competition between the three major companies for investments abroad). Furthermore, the Chinese government is not of a single mind concerning energy policy; there are divergent institutional interests at the ministry and agency level. The result is a policymaking process that is much more fragmented than outsiders generally perceive, in which companies, ministries, and individuals all vie for influence. Given their quasi-governmental status and the political rank of their leadership, China's NOCs are able to operate abroad largely free of government oversight. Rather than consulting with companies regarding future investments, the Ministry of Foreign Affairs often struggles to keep abreast of those investments that have already occurred.²⁹

²⁸ G.A. Donovan and Mike McGovern, "Risky Business," *China Economic Quarterly* 11, no. 2 (Q2 2007): 19–25.

²⁹ Downs, "The Fact and Fiction of Sino-African Energy Relations," 49–50.

The second contention should be rejected out of hand. The belief that China's NOCs are "locking up" resources through equity deals and thus are taking oil off the market and out of reach for other buyers is based on a misunderstanding of oil markets and how they function.³⁰ This contention is based on two assumptions: that Chinese firms sell the oil they extract overseas only to consumers at home and that this in turn reduces the amount of oil available to everyone else. Both assumptions are wrong.

In 2006 CNPC produced 2.7 mbd, of which only 560,000 barrels per day (21%) were from overseas fields.³¹ Nearly 40% of the overseas output came from Kazakhstan, following CNPC's 2005 acquisition of the Canadian company PetroKazakhstan, and another 40% came from Sudan. Sinopec registered less than 100,000 barrels per day of international oil production in 2006, mostly in Africa and Latin America, while CNOOC produced a meager 25,000 barrels per day, almost exclusively in Indonesia.³² Overall, Chinese oil firms' overseas equity production totaled roughly 681,000 barrels per day in 2006. If all of this oil returned to China, only 19% of China's total imports would have been satisfied. Furthermore, this oil would have accounted for less than 2% of global oil trade that year.

Yet according to customs data, industry intelligence, and news reports, most of this oil was not brought back home but instead was sold on the open market to the highest bidder. CNPC only brought back 50,000 of the 200,000 barrels per day it pumped in Kazakhstan and none of the oil produced in Canada, Syria, or Venezuela.³³ The share of CNPC's output sent back to China in 2006 from Sudan, which has long been the majority of the firm's overseas portfolio, declined from the year before. Despite the criticism Beijing took at the UN Security Council and in the court of public opinion over the Chinese oil major's involvement in Sudan, CNPC opted to sell more of its Sudanese crude to Japan in 2006 because Japan was willing to pay a higher price than the company would have been able to obtain at home (see **Figure 6**).

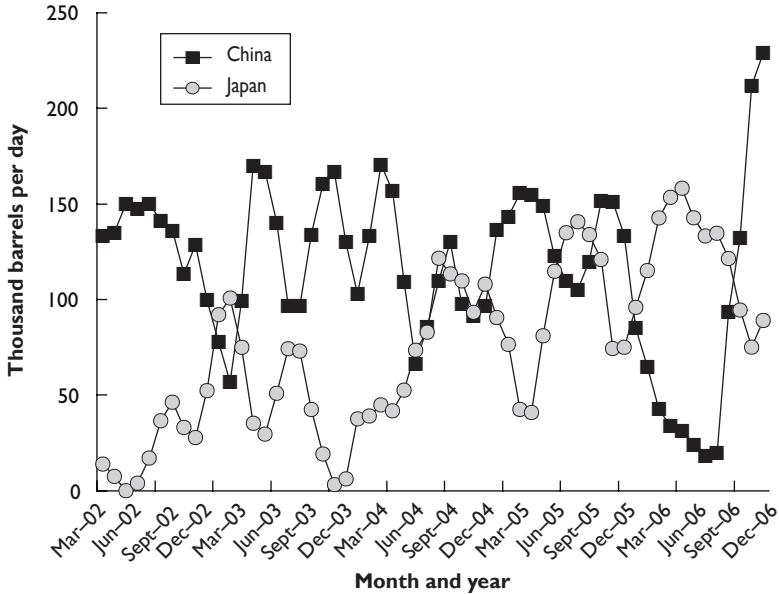
³⁰ Equity deals refer to standard industry production-sharing agreements in which a foreign oil company is given the right to sell a specified share of the oil it produces. As discussed later in this article, nothing about the equity deals that Chinese firms have signed is fundamentally different from those signed by their IOC peers.

³¹ Lee, "CNPC Earned \$23.85 Billion Profit in 2006, up 5.7%."

³² Lin Mo, "2006 is a Reform Year for Sinopec," *Xinhua China Oil, Gas & Petrochemicals*, January 25, 2007; and Lin Mo, "CNOOC: 2006's Ordinary Performance, but with Eye-Catching Prospects," *Xinhua China Oil, Gas & Petrochemicals*, March 19, 2007. Also derived from the author's conversations with Wood Mackenzie and PFC Energy, January–March 2007.

³³ Though customs statistics show crude imports from Venezuela of 84,000 barrels per day in 2006, industry sources confirm that due to a total lack of appropriate refining capacity, all of this oil was traded out in favor of more suitable crudes.

FIGURE 6

Sudan's Oil Exports to China and Japan

Source: China General Customs Administration; and "Trade Statistics of Japan."

This is an important point. Much of the discourse in Washington surrounding Chinese overseas oil investment has focused on the perceived preference of Chinese NOCs to sign equity agreements with host countries. These contracts, which entitle the Chinese firm to a defined share of the field's output as compensation for the company's investment, are the same contracts signed by IOCs operating in those regions. The concern is that while IOCs such as Shell or Chevron will likely sell their production on the open market, a Chinese NOC will only sell its oil to refineries back home, thus removing oil from the total global supply available to everyone. Yet the observed behavior of Chinese firms, which have sophisticated trading operations with offices in London, New York, and Singapore, appears little different than the IOCs. Furthermore, even if every drop of oil a Chinese company produced overseas was shipped back to China, there would be no impact on the amount of oil available on the open market. Every barrel China buys from Sudan is one barrel the country does not need to buy from Saudi Arabia, meaning one more Saudi barrel is available to the United States, Europe, or Japan.

The third contention, that Chinese firms have a lower investment hurdle and benefit from diplomatic support when competing for resources, probably warrants the most concern, though primarily for commercial rather than energy security reasons. As stated above, Chinese NOCs can accept a lower return on investment than the IOCs because the NOCs lack a dividend policy, benefit from cheaper lending, and are willing to operate in riskier political environments. All of these factors are changing, though not all in a way that will improve the competitiveness of the IOCs.

Beijing will soon require SOEs to pay dividends to the government for the first time in over a decade.³⁴ Although the details of this policy are still being determined and the policy's implementation will be gradual, dividend requirements will introduce a new form of capital discipline for the Chinese oil majors. At the same time, the policy will create a channel of government influence on the NOCs in the form of shareholder activism. The introduction of a dividend policy will create a new source of government finance dependent on the performance of the NOCs and will deepen the direct fiscal ties between Beijing and the NOCs, which are presently based solely on tax revenue.

China's financial sector is also undergoing reform, and the government-mandated deposit and lending rates may liberalize in the future. Given the current spread between the two rates and the low risk associated with lending to oil companies, reform could likely result in an even lower cost of capital for China's NOCs than they currently enjoy—one much lower than many of their IOC competitors pay.

As the number of Chinese oil workers kidnapped or murdered overseas increases, the risk premium Chinese NOCs attach to investment in less stable parts of the world will likely reach closer parity with that of the IOCs. This parity in risk premiums is particularly likely if the assets of one of the major NOCs are nationalized in the years ahead, an experience none of the NOCs has yet had to endure. Whether in the Gulf of Guinea or the Gulf of Mexico, technical limitations and political constraints will continue to hinder the ability of Chinese NOCs to compete in safer locales.

The same events (i.e., kidnappings, nationalizations, etc.) that raise the price of investing in high-risk countries for Chinese NOCs raise the price of supporting that investment for the Chinese government. This relationship ties back to the fourth contention: that China's overseas energy investments negatively impact security, development, and the protection of human rights

³⁴ Terence Poon and Juan Chen, "China to Collect Dividends from State Firms from '08," *Dow Jones International News*, September 13, 2007.

in the countries in which the NOCs operate. Although this important topic is far beyond the scope of this article, the author offers the following points to the discussion. There is a growing debate in Beijing over whether lending political support to NOCs overseas is in the country's interest, particularly if the NOCs are unlikely to provide real energy security.³⁵ Given the rate of growth of China's demand and the limited amount of unexploited oil acreage open to foreign operators, overseas investment by Chinese NOCs is unlikely to make a meaningful dent in China's import bill. The case of the skeptics is strengthened with each kidnapping and each protest against China's support for the government of Sudan. Efforts by activists to dub the Beijing 2008 games the "Genocide Olympics" appear to have caught the attention of China's leaders.³⁶ Coupled with the events in Nigeria and Ethiopia, such protests may do much to shape the debate in Beijing.

Washington also has a role in shaping the outcome of this debate. China's growing energy needs are a reality that cannot be wished away. Because China is now the world's second-largest oil consumer, we should expect the profile of Chinese oil companies on the international stage to increase. Neither of these developments is necessarily contrary to U.S. interests. Beijing could become an important partner in ensuring the security of the international energy markets on which both the United States and China rely. If Chinese oil companies continue to commercialize and behave more like IOCs than NOCs, the companies will contribute to the health of global oil markets through increased competition and innovation.

Yet China will not move in this direction unless Beijing is allowed to help shape energy policy at the multilateral level and commercialized Chinese oil companies are allowed to compete freely for investment opportunities in Western countries (e.g., purchasing U.S. or European petroleum companies). U.S. interests would be well served by seeking either to include China as a member of the International Energy Agency or to replace the organization with one in which China can take part.³⁷ In addition, Washington should engage Beijing in confidence-building measures concerning sea lanes of control currently patrolled by the U.S. Navy. If there is to be any hope of coordinating efforts with China to impose pressure on regimes of concern,

³⁵ Linda Jakobson, "The Burden of 'Non-Interference,'" *China Economic Quarterly* 11, no. 2 (Q2 2007): 14–18.

³⁶ Helene Cooper, "Darfur Collides with Olympics, and China Yields," *New York Times*, April 13, 2007.

³⁷ Under current rules, membership in the International Energy Agency is limited to the developed countries that are members of the OECD.

the United States and the European Union would benefit by tempering their eagerness to intervene politically to block foreign investments at home, even those investments made by China's NOCs. China is unlikely to become a partner in promoting standards for resource investment in Africa and Latin America if Beijing believes such standards will not be equally applied in the Gulf of Mexico or the North Sea. In sum, how China's international energy policy and the behavior of Chinese energy companies evolve will depend as much on U.S. actions as on political intentions in Beijing. ◆