



**Berkeley APEC Study Center**  
**Working Papers Series**

Crude World: China's Oil Diplomacy with Pariahs

Elizabeth M. Vissers

June 2013

BWP 13-01

The views expressed in the BASC Working Papers are those of the author(s) and do not necessarily reflect those of the Berkeley APEC Study Center or University of California, Berkeley. Copyright belongs to the author(s). Papers may be downloaded for personal use only.

# CRUDE WORLD: CHINA'S OIL DIPLOMACY WITH PARIAHS

ELIZABETH M. VISSERS

UNIVERSITY OF CALIFORNIA, BERKELEY

JUNE 2013

## Abstract

China's energy needs have risen drastically along with its rapid pace of economic development, leading it to become a net oil importer in 1993. Since then, China has sought to secure oil sources abroad, even using foreign policy to entice oil-producer countries into making deals with Chinese state-owned oil companies rather than just relying on the global oil market alone. However, this activity has included doing business with countries like Iran and Sudan, along with other oil states that are shunned by Western democracies and their oil companies. Researchers have identified three main drivers of China's oil deals with pariah states: insecurity, political considerations, and the availability of oil/market exclusions. This study seeks to evaluate the impact of each of these factors on the mix of China's oil imports by source country from 1992 through 2010 by performing regression analysis on the composite measure of 'freeness' of the source countries of China's oil imports and a composite index of insecurity, a measure of political considerations, and the impact of market exclusions. Findings indicate that insecurity and political considerations indeed seem to be negatively correlated with the 'freeness' of China's oil suppliers, although results were not statistically significant. Market access and exclusions seem to be an important driver of Chinese oil deals with pariahs.

Elizabeth M. Vissers, Berkeley APEC Study Center, 802 Barrows Hall #1970. University of California, Berkeley, CA 94720. E-mail: [evissers@berkeley.edu](mailto:evissers@berkeley.edu). I would like to thank Terri Bimes, T.J. Pempel, and Vinod K. Aggarwal for comments and suggestions.

## I. INTRODUCTION

China's rapid development over the last decades has meant both its rise in power globally and a voracious and burgeoning energy demand—both of which have important implications for the international system. Since becoming a net oil importer in 1993, when the country's domestic oil production was no longer enough to supply the growing demand, China's level of crude oil imports has massively expanded. To confront the exigencies of vulnerability created by such heavy dependence on other states for its vital energy resources, China has engaged in oil diplomacy, or securing oil sources abroad through the use of foreign policy to entice oil-producer countries into making deals with Chinese state-owned oil companies, rather than just relying on the global oil market alone. However, despite calls for China to become a responsible stakeholder in the international system, China's oil diplomacy has included making energy deals with countries like Iran and Sudan regardless of UN sanctions, as well as with other oil states that are shunned by Western democracies and their oil companies. Future production from these new oil development projects is unlikely to be cheaper than production from existing oil fields because arguably the oil resources that are most easily and cost-effectively extracted are developed first, implying that those oil fields that have yet to be developed were likely viewed previously as less attractive investments in comparison to the fields that have already been developed for production. This, then, begs the question of what factors are most important in driving China to make energy deals with and import oil from pariah states. The existing literature focuses on three main drivers: insecurity, political considerations, and market exclusions. In this study I seek to investigate each of these factors and explore which has the most significant effect on China's decision regarding from which states to import oil.

## **Background**

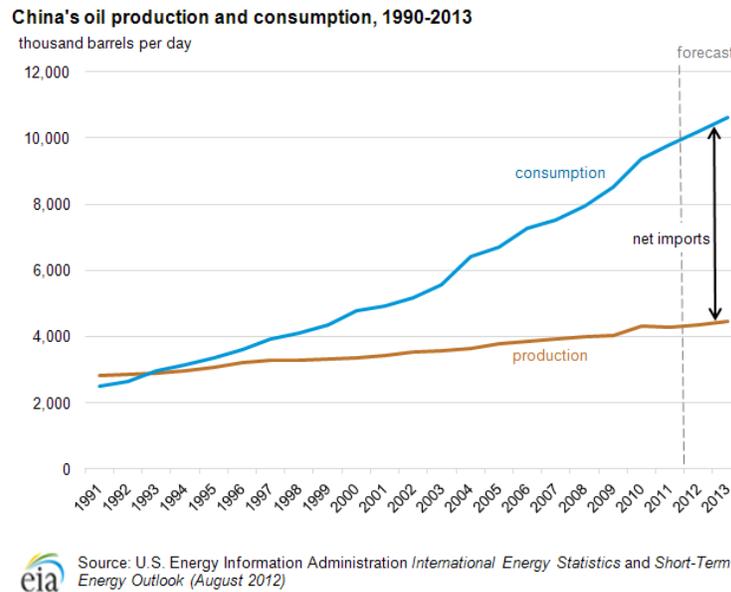
### *Chinese Energy Demand Growth*

Despite being Asia's largest oil exporter as recently as 1985, China is now the world's second-largest oil importer, second only to the United States (Zweig and Jianhai, 2005, p. 25). This drastic change is the result of China's economic boom over the last few decades, which has been encapsulated by rapid urbanization, population increase, rising incomes, and expanded export processing. This continued growth has engendered a massive increase in energy demand, and particularly oil demand, due in part to rising car ownership and petrochemical production. Specifically, "from 1984 to 1995 [oil] demand leaped from 1.7 million to 3.4 million barrels per day (BPD), and by 2005 it had doubled again to 6.8 million BPD" (Kreft, 2006, p. 62). For comparison, Japan, which China surpassed in 2003 as the world's second largest oil consumer, consumed only 5.4 million BPD in 2005 (Calder, 2006, p. 50). China's rapid demand growth between 2000 and 2005 made up 30 percent of the cumulative growth in global oil demand, and the lack of comparable growth in domestic supply meant that virtually all this additional demand was met through increased imports (Calder, 2006, p. 50).

China has been the largest oil producer in Asia since the mid-sixties, in recent years producing around 3.5 million BPD (Kreft, 2006, p. 62). For many decades the country was self-sufficient in oil and even exported modest quantities, but in 1993 China became a net oil importer as demand began to outstrip supply, and since then its imports have risen steeply, even despite some expansion of production. Already in 2006 China was importing over 40 percent of its oil supplies, and this number is only expected to increase further as a result of the country's inexorable demand growth (Kreft, 2006, p. 62). Indeed, the International Energy Agency (IEA) and the US government estimate that Chinese energy demand will continue to escalate in the

coming decades, increasing at a rate nearly double that of overall global energy demand growth, ultimately leading China to overtake the United States as the world's largest energy consumer by 2030 (Calder, 2006, p. 50).

**Figure 1: China's Burgeoning Demand Increases Oil Imports**



According to Calder (2006, p.50), the basis for expectations of sustained rapid economic growth in the PRC, and its resultant sustained energy demand growth, lies in the country's high rates of capital formation and significant anticipated increases in factor productivity. Furthermore, he believes China's economy may become more energy intensive, especially as "automobile ownership and use of energy-intensive appliances like air conditioners steadily broadens" (Calder, 2006, p.50). This unremitting growth in energy demand will beget a concordant fivefold increase in China's oil imports, "from around 2 million BPD in 2002 to almost 11 million BPD by 2030," according to IEA projections, meaning China "would have to import some 80 percent of its oil supplies" (Kreft, 2006, p. 63). Furthermore, China's proven reserves

have dwindled to less than 20 billion barrels, which at current production rates would not last even 15 years (Cornelius and Story, 2007, p. 8).

### *China's Response*

Given this massive growth in energy demand and China's inability to produce enough oil domestically to be self-sufficient, dependence on oil imports has risen to the top of the policy agenda and elicited a strong response from Chinese leaders. This issue is seen as crucial because "China's economic growth depends to a large extent on how far Beijing succeeds in meeting its expanding energy needs" (Kreft, 2006, p. 64). Since China's continued economic growth and stability is considered to be a main pillar of the Chinese Communist Party's (CCP) legitimacy, leaders fear that any shortage of fuel supplies could cause social unrest, thus undermining their own leadership and CCP control. As a result, China has taken a multifaceted approach to addressing this issue that includes working to augment domestic production, investing in other power sources and promoting energy efficiency, and going abroad to secure oil resources.

*Expansion of domestic production.* One of the ways in which China has sought to address its burgeoning demand for oil is by attempting to expand domestic production, but this strategy has had only limited success. Beijing has made an effort to maintain production levels in its traditional northeastern oil fields while simultaneously developing and expanding production in the western part of the country and especially in offshore oil fields in the South China and East China Seas. Yet "China's major onshore oil fields, exploited since the 1950s, are mature and over-drilled" (Cornelius and Story, 2007, p. 8). Thus, China's leaders can only do so much to obviate the stagnation and delay the inexorable decline of these existing oil fields. As such, exploring and producing new domestic reserves has been a high priority. Significant investments have been made to fund exploration in the Xinjiang province and in the South China Sea, but so

far with scant results (Cornelius and Story, 2007, p. 9). In addition, China has restructured its domestic oil industry several times in an effort to augment its efficiency and competitiveness, but these measures are not expected to have a significant impact in terms of expanded production in the near future (Kreft, 2006, p. 63). In the end, it is clear that regardless of its best efforts, China will not be able to expand domestic production to the point of self-sufficiency again, and thus must incorporate other strategies in its quest to address its energy demand growth.

*Promoting Energy Efficiency and Diversifying Energy Sources.* Another aspect of China's surging energy demand is an increased demand for electricity, which the country has tried to meet by expanding coal production as well as investing in nuclear and renewable energy sources, and by promoting energy efficiency. China's energy efficiency has historically been very low, but it has begun to implement measures like its 2005 fuel-efficiency standard for new cars to address the issue (Calder, 2006, p. 56). At present, coal is of paramount importance to China's power industry, providing two-thirds of its total energy needs and supplying around 80 percent of electricity demand. As energy demands skyrocket, coal consumption is expected to double between 2001 and 2025, which would have enormous implications for health and the environment (Kreft, 2006, p. 63). Alongside its coal production, China seeks to grow its nuclear power industry at a target rate of commissioning two new nuclear power plants per year over the next two decades. Furthermore, the PRC aims to augment the share of hydropower from projects such as the Three Gorges Dam and the Yellow River projects, and from renewables such as wind and solar, in its energy mix. Still, despite these ambitious plans, nuclear is not expected to constitute more than 4 percent of total energy supply by the late 2020s (Cornelius and Story, 2007, p.10), and the country may fall short of its target of renewables accounting for a 15 percent share of power generation by 2015 (Kreft, 2006, p. 63).

Although natural gas only made up about 3 percent of China's energy mix in 2005, Beijing aims to amplify that share to 8 to 10 percent by 2020, largely at the expense of coal (Kreft, 2006, p. 64). As such, it has invested heavily in gas exploration and infrastructure, further building on over a decade of rapid growth in domestic gas production and consumption. Investments in infrastructure are focused on "pipelines to bring the gas from the north and west of the country to the cities of the south and along the east coast and to supply private households and industry in these boom regions" (Kreft, 2006, p. 64). For example, the now completed "Develop the West" project built a 4,000-km pipeline to transport gas from Xinjiang to Shanghai. Due to its limited domestic natural gas resources, however, China's promotion of the use of natural gas will further amplify the expansion of fuel imports into the country. Natural gas imports come not only in the form of pipeline gas from Russia and Kazakhstan, but also liquefied natural gas (LNG), the first cargo of which arrived from Australia in May 2006, from a variety of countries, mainly within the Asia-Pacific and Persian Gulf regions.

However, while such investment in diverse energy sources will help to meet China's burgeoning electricity demand, it will do little to ameliorate the country's voracious appetite for oil, because oil demand is fueled largely by the transport sector, where the degree of substitution of oil is generally low. China's expanding car fleet has driven up oil demand, so that the transportation sector in 2005 constituted nearly one-third of China's oil consumption—the largest of any sector—up from less than 20 percent in 1995 (Cornelius and Story, 2007, p. 8). The rate and extent of China's future oil demand growth depends largely on the degree to which companies' and consumers' fuel demand responds to changes in income, and especially on the income elasticity demand for cars (Cornelius and Story, 2007, p. 10). As China's economic

growth continues and incomes rise, car ownership in China is expected to increase significantly.

Cornelius and Story (2007) comment:

Research by the International Monetary Fund shows that both OECD and non-OECD countries started to experience rapid vehicle ownership growth at income levels of about \$2,500 per capita in purchasing power parity terms. Growth in vehicles continues to be much faster than GDP growth until about \$10,000 of per capita income, which leads the IMF to project China's vehicle ownership rates to jump from 16 vehicles per 1,000 people in 2002 to 267 vehicles per 1,000 people in 2030. By that time, China's car fleet would encompass around 387 million units, surpassing the United States' by a considerable margin. Under such assumptions China's oil demand could increase threefold over the next twenty-five years to around 18.7 million b/d. (p. 10)

Notwithstanding a massive overhaul of China's car fleet to switch to electric cars, fuel demand for these cars cannot be met by the electricity-producing energy sources discussed above.

However, China has also pursued the development of unconventional fuel resources, especially coal-to-liquids (CTL). CTL is a form of energy derived from coal—of which China has extensive reserves—that can become economical at \$40/bbl (Cornelius and Story, 2007, p.9). With current oil prices more than double that, and expected to remain high, China may pursue a considerable CTL program. On the other hand, Kreft (2006) points out that due to its rapidly expanding consumption of coal for electricity, China could face the need to begin importing coal by 2015 (p. 63). Thus he concludes, “Despite China's systematic efforts to expand domestic fuel production, the trend towards increasing dependence on fuel imports is irreversible” (Kreft, 2006, p. 64).

*Oil Diplomacy.* By far the most striking aspect of China's response to its quenchless thirst for energy is its high-profile oil diplomacy, focused on obtaining more secure national control of foreign oil supplies. The PRC has recognized energy security as a critical issue and has increasingly made oil diplomacy a central tenet of its foreign policy. “Indeed, China's 10<sup>th</sup> Five Year Plan (2001-2005) refers explicitly and for the first time publicly to energy security, which is defined as guaranteeing and securing oil supplies from abroad as essential to China's

continued economic growth and modernization” (Yetiv and Lu, 2007, p. 199). Furthermore, because growth is ostensibly the cornerstone of social stability and CCP legitimacy, continued access to foreign resources is of paramount importance. Beijing has been successful in adjusting its foreign policy to conform to its domestic development strategy largely as a result of China's relatively centralized, state-controlled economy (Zweig and Jianhai, 2005, p. 26).

Specifically, Beijing has been working in tandem with its state-owned enterprises (SOEs), exhorting them to secure oil exploration and supply agreements with resource-rich states. To incentive such action, the Commerce Ministry and the National Development and Reform Commission have even released a list of countries and resources in which investment is eligible for state subsidies (Zweig and Jianhai, 2005, p. 27). Meanwhile, Beijing exercises its oil diplomacy, which involves “courting the governments of these states aggressively, building goodwill by strengthening bilateral trade relations, awarding aid, forgiving national debt, and helping build roads, bridges, stadiums, and harbors” (Zweig and Jianhai, 2005, p. 26). Calder (2006) identifies Iran, Russia, Kazakhstan, Venezuela, Australia, and African energy producers as special priority targets of China's energy diplomacy, which he predicts will become an increasingly salient component of China's foreign policy in the future (p. 49). Its energy diplomacy has already driven China to hold significant and influential roles in a spate of commodity- and energy-rich countries and regions, and has included forming energy alliances with and making substantial investments in a number of international pariahs such as Sudan, Iran, Myanmar, Venezuela, and Uzbekistan (Kreft, 2006, p. 68).

Heinrich Kreft (2006) characterizes China's oil diplomacy as being a “zero-sum energy strategy based on a strongly neomercantilist approach and aimed at acquiring direct control over overseas oil and gas reserves” (p. 66). Beijing aims for its three oil companies, CNPC, Sinopec,

and CNOOC, to purchase or acquire stakes in foreign oil fields, often to ensure that the output of those oil fields is exported directly to China rather than being sold on the world market, while it facilitates the process by building stronger relationships abroad through repeated diplomatic visits and financial and economic assistance intended to augment trade and deepen military contacts. The central thrust of this oil diplomacy has been in the Persian Gulf, with its vast oil reserves, but it has also spread to include Central Asia, Russia, Africa, and Latin America, resulting in the conclusion of at least eight 'strategic energy alliances' (Kreft, 2006, p. 66). Chen (2008) points out, however, that the incentives of China's oil companies do not always align with Beijing's desires, and thus they do sell some of the foreign oil production they control on the world market rather than exporting all of it to China.

With its comparatively low wellhead production cost, the Middle East has been one obvious target of Chinese oil diplomacy. Within the region, China has focused primarily on forging energy ties with states where American geopolitical influence is relatively limited. One emblematic example is Iran, which, behind low-cost Saudi Arabia, has been one of China's most significant sources of oil imports over much of the past fifteen or so years. The share of Chinese oil imports sourced from Iran has risen drastically, from 0.6% in 1994 to 11.2% in 2005, making evident the increasing importance of their relationship (Yetiv and Lu, 2007, p. 203). In October 2004, China and Iran signed a memorandum of understanding that allowed Sinopec to conclude a \$70 billion, 30-year deal to develop the Yadavaran oil field (Iran's largest undeveloped field) in exchange for agreeing to buy 10 million tons of Iranian liquefied natural gas annually for 25 years (Calder, 2006, p. 55). In addition, Tehran promised the delivery of 150,000 barrels of oil per day to China at market prices for the next 25 years (Zweig and Jianhai, 2005, p. 9). The two countries have further deepened their strategic cooperation by concluding several other

significant oil and gas contracts in 2005 and 2006, and by agreeing to construct a pipeline in Iran that will carry oil to the Caspian Sea, which will then be delivered to China via a pipeline between Kazakhstan and China (Yetiv and Lu, 2007, p. 205). Another example of Chinese energy relations with an intensely anti-American state is the case of Iraq before its invasion by the US. In the years leading up to the Iraq war, China was consistently the third or fourth largest consumer of Iraqi oil exports, importing 500,000 tons of oil from Iraq in 2002 (Calder, 2006, p. 55).

Yet China's most import source of oil imports has been Saudi Arabia, and concordantly China has endeavored to enhance and strengthen the relationship between the two countries. These efforts began in the 1990s, ultimately laying the groundwork for the 1999 Strategic Oil Cooperation agreement signed in Riyadh by then-president Jian Zemin. The agreement opened the Saudi Arabian market to Chinese investment in exchange for allowing Saudi companies to gain a foothold in the growing Chinese market by initiating their participation in China's downstream refining business (Yetiv and Lu, 2007, p. 205). Further meaningful progress was made in developing the relationship when Saudi Arabian King Abdullah, on his first formal overseas trip since assuming the throne, visited China and signed five major energy cooperation agreements there in 2006. Saudi Arabia's provision of expertise and heavy investments in China's growing refining capacity, with the aim of becoming a major player in China, coupled with Riyadh's growing oil exports to China even at the cost of diverting some of its lower-sulfur crude exports away from Europe and the US, making it likely to retain and expand its position as China's top oil source, mean that this relationship will be significant and lasting into the foreseeable future.

Still, China has consciously striven to limit its dependence on the Middle East, which has made Africa another critical region for China's oil needs. Africa's share of Chinese oil imports—over 23 percent in 2006—is especially striking given its comparative lack of geographic proximity to China. Especially Sudan and Angola—both nations where American geopolitical influence is limited—have been key oil suppliers to China. “China's oil imports from Angola nearly tripled during 2002-2004, as Angola became China's third largest oil supplier, with the Sudan in sixth place,” and their contribution has risen even further since then (Calder, 2006, p. 56). Furthermore, China's largest investments in the outside oil sector are in Sudan (Kreft, 2006, p. 68). In an effort to gain traction throughout the region, Beijing created the China-Africa Cooperation Forum in 2000 to advance trade and investment with 44 African countries. Oil diplomacy in Africa also involved diplomatic visits like those to several oil-producing African states by Prime Minister Wen, accompanied by Chinese oil executives, in 2003.

Next, China has demonstrated significant interest in securing energy resources from Central Asia and Russia, especially since this would reduce the share of China's energy imports that flow through the vulnerable Straits of Malacca and sea lanes controlled by the US Navy. Russia's share of Chinese oil imports has been rising, and the two countries could potentially intensify their energy ties if future oil and gas contracts and projects are successful, barring any insurmountable corporate, local government, or strategic obstacles. “In 2004 Russia became China's fifth largest oil supplier, with its share of total PRC imports rising to 8.8 percent, from 5.8 percent the previous year, despite the collapse of the Yukos deal,” and in 2005 “Chinese oil imports from Russia broke 10 percent of total supplies” (Calder, 2006, p. 56). Furthermore, Russia holds at least a third of natural gas reserves and is a fairly low-cost supplier. China has

also made a special effort to deepen energy relations with Kazakhstan, but with mixed results. On the one hand, the China National Petroleum Corporation (CNPC) successfully purchased a 60 percent share of the Kazakh oil firm Aktobemunaigaz, agreeing to provide heavy investments to fund the company's future development over the next twenty years, but on the other hand, CNOOC, another of China's oil companies, was barred from securing a stake in the major Kashagan oil field "when consortium partners in that project exercised their rights to block the sale of a 16.7 percent interest in the project to CNOOC" (Calder, 2006, p. 60). Still, China and Kazakhstan cooperated to complete a \$700 million, 1000 kilometer oil pipeline from western Kazakhstan to northwestern China in December 2005, with initial capacity of 10 million tons per year that was to be doubled by 2011, meaning as much as 90 percent of Kazakhstan's oil production could ultimately be delivered to China via this route (Calder, 2006, p. 60). Chinese energy ties with Kazakhstan were further enhanced after CNPC's acquisition of the Canadian firm PetroKaz in 2005, which has extensive operations in Kazakhstan.

Finally, Beijing has recently turned its gaze to Latin America. In addition to China's significant expansion of trade and investment across the continent, which has made it the core driver of many Latin American states' export growth, Beijing has taken action to secure oil resources in South America as well. China has signed multiple oil-supply agreements with Venezuela, and "dozens of business leaders accompanied President Hu on his four-stop trip to the region in November 2004, during which he announced \$20 billion in new investments for oil and gas exploration and other projects" (Zweig and Jianhai, 2005, p. 29). In recent years, Brazil, a country which shares many of China's political views as a developing country rising onto the world stage, has also become a growing source of imports.

*Implications of China's Oil Diplomacy*

China's striking oil diplomacy has considerable implications for the international system and has certainly not gone unnoticed. Beijing's activities have caused concerns about both the fact that it is working to systematically secure direct control over foreign energy resources and the impacts it has had on the international community, especially with regard to China's flourishing influence in certain spheres. Much attention is being paid to China's energy activity vis-à-vis the United States, which fits into a broader context of recent focus in the international arena on China's rise and its consequences for American hegemony and the balance of power in the international system. The potential for significant conflict is tempered by heavy interdependence between the two countries, but the implications of China's oil diplomacy, discussed below, may heighten tensions.

To begin, Kreft (2006) expresses concern about the effects of the neomercantilist aspect of China's oil strategy, namely attempting to gain direct control of oil production in oil-exporting states in order to ensure its delivery to China rather than selling it on the world oil market. He comments, "If China succeeds in the attempt to meet its energy needs by turning certain countries into its own exclusive suppliers, the capacity of the world oil market to respond flexibly to sudden shortages or increased demand will be significantly reduced" (Kreft, 2006, p. 66-67). Thus the claiming of oil resources to circumvent the market in effect reduces the total oil supply available in the global market, which weakens the ability of the market mechanism to buffer against supply interruptions and price volatility, thus making all those who purchase substantial amounts of oil on the global market vulnerable to the vicissitudes of oil supply and demand levels. This runs directly counter to what the Western industrialized countries learned from the 1973-74 oil shock, namely that playing a zero-sum game in a crisis only aggravates the situation by abating the ability of the market to respond to oil shortages flexibly and efficiently

(Kreft, 2006, p. 67). The International Energy Agency (IEA) was established following the shock to promote cooperation and obviate individualistic competition for oil that only serves to worsen shortages and inflate prices further in a crisis. Since then, the West has prioritized a strategy of diversifying oil production and maximizing the amount that reaches the global oil market, so that market forces can regulate its allocation (Kreft, 2006, p. 67).

In addition, China's energy nationalism could escalate tensions and exacerbate existing rivalries with several of its neighbors. For example, China and Japan, both immense energy consumers, are at odds over a small offshore gas field in the East China Sea which both claim as their own, and have been embroiled in extensive competition with each other over Russian energy resources and their own preferred pipeline routes to carry these resources from Siberia to the Pacific coast (Kreft, 2006, p. 67). However, the scramble for oil is not limited to these two countries; rather, "there is abundant evidence for the spread of a virulent form of 'energy nationalism' right across Asia, which is fueling long-standing rivalries" (Kreft, 2006, p. 67). Indeed, all of Asia's major economic players, including China, Japan, India, South Korea, and a growing number of Southeast Asian countries, have pursued nationalistic policies in the interest of improving individual energy security, which encumber the initiation of cooperative and market-oriented measures to create a collective response to the shared issue of energy security. This energy nationalism may also fuel naval and military buildups as states seek to address supply route security in the context of heightening tensions and energy competition. This concern could be especially salient with regard to China, which has expressed unease about its lack of control over the sea lanes through which so much of their energy imports are transported. Military and naval buildups could destabilize the region, and in the case of sea lanes, pit China against the United States and its currently far superior navy.

The other major concern revolves around which states in particular China's oil diplomacy has focused on, and the impact of their resultant growing influence in regions across the world. Indeed, some states worry as Beijing enters their spheres of influence or makes deals with governments they have tried to marginalize. For example, China has steadily expanded its position and interest in the Persian Gulf, and its influence in the region is expected to continue to rise in the medium-term. Since the Persian Gulf region has the most extensive proven oil reserves in the world, it has become vitally important to China for its energy needs. "In order to ensure adequate energy to sustain its growing population and economy, Beijing has successfully established and in some cases dramatically expanded diplomatic, economic, and security ties across the region, which it lacked in 1980" (Yetiv and Lu, 2007, p. 200). Due to its lack of military capability there, Beijing has relied almost singularly on diplomatic tools such as strengthening diplomatic ties, trade and foreign direct investment, and arms sales, along with its influence in the United Nations and in terms of its relations with France and Russia, to cultivate its interests in the region (Yetiv and Lu, 2007, p. 201). China's rising star has already engendered tensions with the United States, and Beijing's expanding influence in the Middle East, a region where the United States has historically had significant geopolitical influence, could serve to challenge US power and heighten these tensions. Particularly, it may further complicate the already problematic relationships the United States has with several countries in the region. Especially sensitive is the issue of Iran's nuclear ambitions, viewed as a critical threat by much of the international community, which, in combination with Iran's intransigency, has created a lasting dispute. China's extensive energy ties with Iran, as mentioned earlier, have complicated US efforts to check Iran, especially with regard to sanctions that embargo Iran's oil exports. With nearly two-thirds of Middle Eastern oil production already being exported to Asia,

a trend that will likely increase, several countries in the region, notably Saudi Arabia, are endeavoring to deepen ties with China in part to assuage their one-sided dependence on the United States (Kreft, 2006, p. 68).

Along with complicating efforts to marginalize Iran, Beijing has been charged with watering down a UN resolution condemning Khartoum for its massive human rights violations in Darfur, and for undermining the expansion of sanctions against Sudan and its oil industry (Kreft, 2006, p. 68). Furthermore, China's expansion of business and conclusion of energy deals with other pariahs including Myanmar, Uzbekistan, and Venezuela, "clearly runs counter to everything the international community is doing to promote respect for human rights and good governance" (Kreft, 2006, p. 68). The United States, among others, has recognized the problems that China's oil diplomacy and energy alliances have created, and it seeks to address these issues, but in doing so must tread carefully. In 2004, "Chris Hill, the Assistant Secretary of State for East Asian and Pacific Affairs, reported to a subcommittee of the US House of Representatives that a major task for the United States and its Asian allies was 'to ensure that in its search for resources and commodities to gird its economic machinery, China does not underwrite the continuation of regimes that pursue policies seeking to undermine rather than sustain the security and stability of the international community'" (Zweig and Jianhai, 2005, p. 32). This is no easy task, because if Beijing feels that the US or others are attempting to contain China and its rise, it could utilize its expanding energy influence to undermine Western foreign and security policies (Kreft, 2006, p. 70). Thus, whether China proves to be cooperative or confrontational vis-à-vis the US and other major powers is to a large extent dependent on how receptive the US and the broader international community are to China's rising influence and integration across the world

(Calder, 2006, p. 63). China's oil diplomacy has thus altered the complex web of international relations and engendered significant new political-economic equations.

### **Methodology**

My study utilizes an assessment of existing literature to identify what are considered to be the three possible factors driving China's oil diplomacy and energy deals with pariah states. I then construct variables for the average 'freeness' of the countries from which China imports its oil—intended to be representative of how much oil China imports from pariahs as a direct result of its energy ties with such states, a composite index of China's insecurity, and a measure of China's political considerations in terms of which countries vote with China in the United Nations General Assembly. While I intended to create a measure for market exclusions and the amount of oil still open to foreign direct investment, limits on available data prevented this. Still, my study performs a multivariate regression to assess the effects of insecurity and political considerations on the dependent variable and a qualitative investigation into the impacts of market forces and exclusions on China's investments in foreign oil.

### **Findings**

Results indicate that, as expected, measures of energy insecurity and political consideration seem to be negatively correlated with the composite 'freeness' of the countries from which China imports oil. However, these findings were not statistically significant. An examination of market access and exclusion reveals that this seems to be a very significant factor in determining China's oil diplomacy and the activities of its international oil companies.

### **Overview of the Following Sections**

In the following section, I review existing academic literature regarding the drivers of China's oil diplomacy and energy deals with pariah states, selecting the argument that market exclusions are

the key driver as being the most convincing. In the next section, I propose and discuss my model and three hypotheses. This is followed by a defense of my research design, and ultimately, by analysis and discussion of my findings.

## **II. INSECURITY, POLITICS, AND MARKET EXCLUSIONS**

### **Introduction**

As China develops, its energy demand has burgeoned, resulting in growth in oil imports and rendering it an increasingly important actor in the global oil market. “Already the world’s second largest energy consumer, China has accounted for more than a third of the increase in global oil demand since 2000” (Calder, 2006, p. 49). This has forced China to confront the exigencies of insecurity that arise from being heavily dependent on other countries for energy sources, and it has responded in part by engaging in oil diplomacy and making energy deals abroad, including with a host of pariah states. This phenomenon has created a complicated set of issues, as China’s investments in and ties with such states at times undermine the goals of the international community and its ability to marginalize rogue states. Because of this, it is important to explore and understand the drivers of China’s oil diplomacy and its energy deals with pariahs. The existing academic literature focuses on three main factors: insecurity, political considerations, and market exclusions. While the authors seem to agree that all three of these factors have some effect, they emphasize and favor different ones as being the most significant. While the arguments in support of insecurity and political considerations as the crucial drivers of China’s oil diplomacy and engagement with pariahs have considerable merit and contribute to our understanding of this complex issue, the argument that market forces are most important in shaping Chinese activity is most convincing because it considers the underlying structure of the international oil industry in addition to both China’s motives and external influences.

### **Insecurity**

One school of thought sets out the notion that China’s oil diplomacy is a response to the exigencies of a deep-seated energy insecurity that encapsulates distrust of the global oil market

as well as concerns about American power over sea lanes and in oil producing regions. Authors such as Calder, Kreft, and Yetiv and Lu consider insecurity the critical departure point from which to interpret and understand the Chinese strategy of securing oil resources abroad. These scholars emphasize China's burgeoning energy demand and stagnating domestic production, and their implications for China's growing dependence on foreign oil, as being the foundations of Chinese energy insecurity. However, their arguments seem to imply that China is more energy insecure than other importing nations because Beijing fears the possibility that the US will attempt to contain China's rise by exploiting the country's energy vulnerabilities. Especially considering that the cornerstone of the CCP's legitimacy is economic growth, which is becoming ever more dependent on foreign oil, such concerns are understandable.

To begin, Kreft argues that China is unwilling to simply rely on the global market to purchase the crude oil they require because such a course of action would leave the country vulnerable to the vicissitudes of the market. This is far too risky, especially given the necessity of oil to fuel China's economic engine. Supply bottlenecks in other parts of the world, significant price fluctuations, and oil shortages could slow growth and threaten domestic order. Furthermore, the nature of global energy policy is unpredictable, and, in China's opinion, the West wields far too much control over the global oil market. This view is evidenced by the fact that China's State Council Information Service claimed western oil companies were government-backed, profit-seeking "international petroleum crocodiles" that manipulate oil prices (Jiang, 2006, p.2). This perception is exacerbated by the windfall profits earned by companies like BP, Exxon Mobil, and Royal Dutch Shell in recent years. Fears of the volatile nature of the market, heightened by Western dominance over the market, have thus driven China's leaders to engage in oil diplomacy in an attempt to secure energy resources at relatively stable prices. Kreft (2006)

characterizes China's efforts to reduce its vulnerability to shortages and price shocks as a "zero-sum energy strategy based on a strongly neomercantilist approach and aimed at acquiring direct control over overseas oil and gas reserves" (p. 66). Such a statement fails to encompass all aspects of China's oil diplomacy, which has included endeavors other than those solely aimed at acquiring direct control over resources abroad, and thus reveals the author's bias of considering insecurity as being the paramount driver of China's actions.

While the argument that China views oil as too essential to be left to market forces alone has strength in its ability to suggest a basis for China's oil diplomacy, it is not particularly useful in explaining China's selection of countries with which to engage in this oil diplomacy. Furthermore, it is not clear that China's energy alliances and oil deals will protect it from rising oil prices. Still, Yetiv and Lu (2007) comment that Beijing believes its close mutual investment with Middle Eastern countries, which has encapsulated investment by Middle Eastern oil producers in China's downstream oil refinery and petrochemical industry and off-shore oil exploration, and Chinese investment in oil exploration and production in the Middle East, will help stabilize China's oil supply from the Middle East. Again, this depicts China's investments in the region as being the product of insecurity and as having the goal of securing more stable supplies by investing in oil production abroad and building relationships with producer countries. The latter seems to be especially important in the context of what the authors of this school of thought describe as Beijing's concerns about American power and involvement in oil-producing regions, which they argue contributes significantly to China's energy insecurity (Calder, 2006; Kreft, 2006; and Yetiv and Lu, 2007).

American military power and dominance over sea lanes are important drivers of aspects of China's oil diplomacy. While Kreft (2006) emphasizes the importance of American actions in

heightening China's sense of vulnerability and propelling Beijing to secure oil resources abroad, his analysis does not contribute much to our understanding of which countries China chooses to invest in. Cornelius and Story (2007) offer more help on this point, claiming that American dominance has driven China to diversify its energy supplies to the greatest extent possible. While they do not say so explicitly, this argument by default means China seeks to secure oil supplies from as many countries as they can, which explains why China does business with pariah states. Calder (2006) makes a slightly different argument, claiming that Chinese concerns about American dominance have spurred Beijing to utilize its diplomacy to seek oil resources in countries where American geopolitical power is relatively limited. Yetiv and Lu (2007) support both of these perspectives, but they also provide a more historical explanation in which China's oil deals are to some extent an outgrowth of their existing relationships in the Middle East, which they have built up over the last few decades. All these arguments have merit and are particularly important in their implications for how American actions drive Chinese behavior.

To begin, these authors lay out a strong basis for China's disquietude regarding American power and actions. Historically, the United States has had a strong presence in the Middle East, the region that holds the world's largest proven oil reserves and thus is a significant source of Chinese crude imports. This constitutes a major concern for China because it means the US potentially has the power to influence producing countries in a way that is detrimental to China's energy needs. Furthermore, Kreft (2006) claims, "The 9/11 terrorist attacks on the United States, the predominantly American 'war on terror,' and the military interventions in Afghanistan and Iraq have all combined to heighten China's sense of insecurity and vulnerability" (p. 65). Beijing is concerned about American military power and that what they view as a US overreaction to the 9/11 terrorist attacks contributes to instability in the Middle East and Central

Asia. "Given that China sees the US in the long term as a strategic competitor, any expansion of US influence in Central Asia and the Persian Gulf is liable to exacerbate its fears of encirclement" (Kreft, 2006, p. 65). Furthermore, China's concerns about American power are compounded by what it perceives as a less than cooperative US in working on issues of energy security. Kreft (2006) cites Chinese exclusion from institutions like the International Energy Agency (IEA) as an example, and Calder (2006) mentions the rejection of CNOOC's bid for Unocal in 2005 as another example (p. 54). In addition, in their discussion of Chinese arms sales to the Middle East, Yetiv and Lu (2007) comment, "Throughout the 1990s, the United States not only continued to challenge the PRC's arms relationship with Iran and Iraq, but also to defeat its efforts to gain market share across the Gulf" (p. 211). Thus, because the US already attempted to block Chinese activity in the Middle East previously, it is logical that China may be concerned that the US could adopt a similar strategy with oil. A final example that makes evident China's concerns about American power in the Middle East is Beijing's opinions about the aftermath of the Iraq war. According to Yetiv and Lu (2007), Beijing has been adamant in calling for a substantial UN role in Iraq. Thus, "as shown by desired principles in reconstruction of Iraq, Beijing prefers less American power in Iraq, a notion that ties into its broader global strategy of seeking a multipolar world in lieu of a hegemonic one" (Yetiv and Lu, 2007, p. 201).

China's concerns about American power are significant in that they have driven Chinese oil diplomacy. Cornelius and Story (2007) propose that China's oil diplomacy is in large part an attempt to diversify its energy supplies as a result of its discomfort about American control of sea lanes. However, while China does indeed express concern about American naval power, the argument that this is the reason for seeking more diverse energy supplies is unconvincing, because no matter where China's oil imports come from, they must still pass through American-

controlled sea lanes. The only exception is oil that is piped over land, which helps explain China's activity in Central Asia and the Middle East. Thus, the claim that concern over sea lanes has incited China to import increasing shares of its oil from African countries such as Angola, Sudan, and Congo, along with countries such as Brazil and Venezuela in Latin America, is tenuous. A better argument from an insecurity perspective would be that China seeks to diversify its oil supplies so as to limit its dependence on any one country, thus buffering against instability or unrest that affects oil supplies in a particular region.

Calder (2006), on the other hand, uses the basis of Chinese insecurity about American power in oil producing regions to argue that, especially within the Middle East, China has prioritized its oil diplomacy and deals toward nations where American geopolitical influence is relatively limited (p. 54-55). Iran is the most notable example, although Calder does mention that China remains sensitive to how its developing relationship with Iran will play in Washington. In addition to Iran, Calder comments that China's imports from Sudan and Angola, both nations where American influence is also limited, are rising. Yetiv and Lu (2007) also seem to support this notion, explaining China's expansion of its ties to Saudi Arabia and Iran as an effort to strengthen its relationships with two of its main suppliers, because "China often tends to view the United States as a strategic rival, and has become very concerned about becoming dependent on oil imports from the Persian Gulf where American forces have control" (p. 205). Thus, they imply that China seeks to develop its energy ties with countries where the reach of American power has not taken a strong foothold in order to limit its vulnerabilities vis-à-vis the United States.

While the authors' claims that China's energy insecurity is the driver of its oil diplomacy have merit, they provide too narrow a perspective of the environment in which China operates.

By focusing solely on American dominance and security issues, these arguments fail to recognize some of the deeper complexities of China's behavior. Of those in the insecurity school of thought, Yetiv and Lu are the most progressive in their recognition of the role that other factors may play, although they still explicitly state that insecurity is the driving factor of China's actions. Still, their historical-political description of Chinese activity over the past few decades in the Middle East leading up to recent energy deals in the region implicitly suggests that they see some role for political factors. While Cornelius and Story (2007) also admit that China's foreign policy is "designed to signal a certain distancing from the United States, notably with regard to the Middle East" (p. 15), they reject the notion that China is seeking to balance against the United States in the international system by using its oil diplomacy as a means to create a coalition of states to counter American power. Rather, they view China's oil diplomacy to secure resources as being at odds with the declared objective of the country's 'peaceful rise,' but they believe this political goal is overridden by the exigencies of insecurity, thus implying that insecurity is the most important factor in determining Chinese behavior.

### **Political Considerations**

In contrast to the authors in the insecurity school of thought, Ziegler and Chen argue that China's oil diplomacy is engendered not only by its insecurity, but also by political considerations. They provide a more nuanced explanation that seems to be more instructive in understanding the particulars of China's energy alliances and deals. In this sense, they view China's development of energy ties with certain countries not only as an end in itself, but also a means to expand its political presence and influence. Part of the divergence of Ziegler and Chen's explanations from those about insecurity presented earlier comes from their recognition that Chinese political leadership and Chinese oil companies are not one entity. By analyzing Chinese activity to secure

energy resources abroad from the lenses of both the Chinese government and Chinese state-owned oil companies, Chen and Ziegler are better able to parse out Beijing's interests and offer a richer explanation of the drivers of China's oil diplomacy.

To begin, Chen (2008) criticizes the existing literature for its unidimensional approach to China's national oil companies. "Most studies take either a static view of China's motivations, identifying both the government and the national oil companies (NOCs) as the same interest entity, or regarding the latter merely as an extension of state policy. Consequently they tend to explicitly and implicitly look at every NOCs' behavior in the foreign markets as the strategic actions of Beijing, which apparently is untrue" (Chen, 2008, p. 79-80). Ziegler (2006) also makes this distinction, describing the relationship between China's government and its oil companies as a corporatist one, because their interests do overlap with those of its oil companies in a multitude of ways. Still, although China's national oil companies have been given increasing economic autonomy, "their activities are expected to mesh with Beijing's foreign policy strategy. When China's oil companies seek to acquire holdings in oil-rich states around the world, these acquisitions serve the twin goals of strategic energy diversification and expanding political presence" (Ziegler, 2006, p. 14). Recognizing that the Chinese government and Chinese oil companies operate as separate entities allows Ziegler and Chen to emphasize the importance of political considerations in Beijing's efforts. In this sense Chen (2008) differentiates oil diplomacy from oil trade as entailing state involvement and being driven in part by noneconomic considerations such as expanding the state's sphere of influence and boosting inter-state relations, as opposed to the strictly profit-centered, firm-to-firm deals encompassed by oil trade (Chen, 2008, p. 80). In other words, China's energy diplomacy is a mix of politics and economics.

Furthermore, political considerations can even take precedence over economic ones. For example, when Beijing encounters a project that would provide significant political benefits but has no commercial feasibility, it may still use its vast foreign reserves to support its national oil companies and encourage it to pursue the deal irrespective of economic costs. Chen (2008) provides the example of CNPC in 1997 outbidding Texaco, Amoco, and Russian firms to acquire a sixty percent stake in Kazakhstan's state-owned Aktyubinsk Oil Company as well as the exclusive right to develop the Uzen oil field, Kazakhstan's second largest oil field. However, CNPC is said to have overpaid as much as thirty percent for the deal, in addition to having to promise to build a pipeline from Kazakhstan to China despite its questionable commercial feasibility. Nevertheless, the Chinese government bolstered CNPC in making the deal, likely because of the political calculation that the pipeline would bring stability to the Xinjiang region (Chen, 2008, p. 82). In addition, the other major political aspect of China's oil diplomacy relates to its development strategy, which entails cultivating some large state-owned enterprises (SOEs) that have strategic and fiscal importance. "It is manifest that petroleum, possessing both strategic and fiscal values, is regarded as a pillar industry that should be in the hands of the state" (Chen, 2008, p. 86). The oil industry is especially important in terms of its tax contribution, as made evident by the fact that, of the top 500 tax payers of listed companies in 2005, oil mining and petrochemical firms contributed about 23 percent of tax revenues, more than most other SOEs (Chen, 2008, p. 86). However, the lack of competitiveness of Chinese national oil companies in comparison to the multinational oil companies constitutes another concern for Beijing, which it feels can be addressed in part by encouraging its NOCs to go abroad. The idea is that this will expose them to more competition—they have monopolistic control over China's domestic energy market—and will allow them to learn about more advanced technologies and

techniques. However, Beijing feels it imperative to provide the NOCs with state support in part by engaging in oil diplomacy because they face fierce competition abroad that they may not be able to overcome without their government's help due to their relative uncompetitiveness.

Beijing's encouragement of its NOCs to go abroad is further driven by its political interest of limiting unemployment, an issue that has vexed China for a while. Previous reforms to make the oil SOEs more competitive resulted in millions of workers being laid off. Still, compared to the multinational oil companies, Chinese oil companies still have redundant staff. For example, in 2003 BP generated 10.44 billion dollars of net profit with a staff of 107,000, while Sinopec only produced 1.05 billion dollars of net profit despite having a staff as large as 855,000 (Chen, 2008, p. 87). Yet because unemployment is such an important issue for China's leaders, they are extremely hesitant to institute further reforms that will cut more jobs. Instead, they see developing business in foreign markets as "conducive to resolving the overstaffing problem in SOEs by exporting Chinese labor" (Chen, 2008, p. 87).

In addition to providing a basis for Beijing's support of Chinese oil companies going abroad through its energy diplomacy per se, political considerations can also help to explain which countries China has engaged and developed relations with. For example, China may strengthen ties to countries which share its views of non-interference in issues of national sovereignty or countries which may help it hedge against American power in the international system. Chen (2008) suggests that China's ties with Russia and countries in Central and Southeast Asia serve in part to parry the efforts of the US and others to contain China, and that China's oil diplomacy in the Middle East, Latin America, and Africa is partially driven by China's political goals, especially its Taiwan policy (p. 88). Other considerations include expanding political presence and relationships to facilitate the pursuit of shared strategic

interests. For example, China's interests of maintaining stability, controlling narcotics trafficking, and preventing terrorism, separatism, and religious extremism in the Central Asian region coincide with the interests of leaders there, thus facilitating their development of economic, diplomatic, and energy ties. Ziegler's assertion that "the uncertainty of bilateral energy ties has contributed to a new appreciation for multilateral organizations in Beijing's international energy policy" (Ziegler, 2006, p. 17) suggests that such bilateral energy ties are not reliable enough to ameliorate China's feelings of insecurity. This undermines the argument of the authors who propose insecurity as the strongest factor driving China's oil diplomacy, thus leaving more room for political considerations to be accorded a leading role. Chen and Ziegler together provide quite a convincing account of political considerations as a key driver of China's oil diplomacy. In part the strength of their argument stems from their consideration of influences external to direct energy issues, which is more accurately representative of the fact that China's oil diplomacy does not exist in a vacuum but rather in the context of its strategies for development and its rising position in the international system.

### **Market Exclusions**

The final school of thought evident in the literature goes even further than the political considerations argument in utilizing external influences to explain China's oil diplomacy, particularly in terms of which countries China chooses to invest in and develop energy ties with. While also emphasizing security and political considerations, Dannreuther (2011) and Zweig and Jianhai (2005) propose that which countries become the recipients of Chinese investments and oil diplomacy is largely determined by which countries are open to Chinese investment. Thus, the system constrains China's options and engenders its deals with pariahs like Iran and Sudan simply because those are ostensibly among the limited places where China can invest in oil

exploration and production; many countries do not open their oil industry to foreign direct investment or are already controlled by Western multinational oil companies, leaving China to pick up the scraps in countries that are seen as high-risk for investment or are avoided by the West for political reasons. China's policy of noninterference in domestic issues facilitates its oil investments in and ties with international pariahs, and state support for Chinese national oil companies makes them less risk-averse.

To begin, Dannreuther (2011) challenges the insecurity school of thought by arguing that there has been an evident shift in China's energy strategy, away from a neomercantilist approach toward one that at a minimum recognizes the role of international markets and their support by the West. This shift has been driven in part by the growing recognition, long promoted by western commentators, that in times of major crisis in the oil markets neither the possession of overseas reserves and equity oil production nor long-term supply agreements will be of much value" (Dannreuther, 2011, p. 1348). Thus, this minimizes the power of the arguments offered by the authors who promote insecurity as the driving factor of China's energy diplomacy, because it seems that China is increasingly addressing this insecurity by recognizing the value of the market, which means there must be other factors that drive the perpetuation of China's oil diplomacy and deals with pariahs. Still, even when China did more strongly believe it imperative for their energy security to acquire direct control of foreign oil resources via their national oil companies, the locations of such investments and acquisitions are better explained by market arguments than security arguments. China felt it had to move quickly and avidly to successfully acquire what it saw as limited remaining oil reserves, which also helps explain the vigorous aid provided by the state to the Chinese NOCs (Dannreuther, 2011, p. 1347-1348). As 'late entrants' into international energy markets, where most of the world's oil resources are

already under the control of multinational oil companies or the national oil companies of oil-producing states, China was left to face the ostensibly inevitable consequence of having to pursue energy deals with countries considered pariahs by the West (Dannreuther, 2011, p. 1352). Thus, China's comparative advantage in the international oil industry lies in countries where access to energy resources incurs significant political or economic risk. In other words, China's energy deals with pariah states are driven less by concerns about American power, as the insecurity school of thought would argue, and political considerations such as balancing against the United States, as the political school of thought would claim, and more by the realities of market forces. A telling example of this is Sudan, where China only entered the country after western companies had withdrawn due to the humanitarian crisis in Darfur and Sudan's classification as a pariah state (Dannreuther, 2011, p. 1352). China has also taken advantage of similar forced disengagement by multinational oil companies in Venezuela and Iran. Zweig and Jianhai (2005) agree that Chinese oil companies have limited options and thus are typically left to pick up secondary deals or move into markets from which the US has vacated (p. 36-37).

China's energy deals with pariahs, made possible by the noninterference principle in China's foreign policy, have created a complex set of problems. While not directly pitting China against the United States in a competition for the same resources, since Washington has already given up on the energy resources found in pariah states by shunning these nations, China's oil ties with rogue states can perpetuate the control of governments that do not respect international regimes and undermine US efforts to promote democracy, nuclear nonproliferation, and human rights. "As Beijing's search for resources prompts it to reinforce relations with Iran, Myanmar, and Sudan, China is challenging the United States' moral hegemony and its ability to check states whose records it abhors" (Zweig and Jianhai, 2005, p. 32). This raises the larger political

question of whether China is utilizing its energy ties with neighboring countries and pariahs to develop a balancing coalition against the West, which, although maybe not going so far as 'hard balancing' through a military alliance, may encompass a strategy of 'soft balancing' that incorporates diplomatic, political, and military actions with the explicit goal of hindering and undermining, if not directly overturning, US hegemony (Dannreuther, 2011, p. 1353).

Dannreuther (2011) addresses this question by arguing that, despite some political considerations, China's oil diplomacy and energy deals are not intended as an overt challenge to the United States. The evidence he uses to support this view includes China's economic interdependence with the West, recent Chinese deals in Iraq that are in joint collaboration with western international oil companies, and China's realization that as a large oil importer it has many congruent interests with other major oil importers such as the US, the EU, and Japan (Dannreuther, 2011). The author thus repudiates the argument that political considerations are the most important factor in driving China's energy deals in favor of a market-driven perspective. In fact, Dannreuther (2011) depicts China as being cautious about its relations with the more revisionist states like Russia, Iran, and Venezuela because it is highly dependent on the United States market, and it does not wish to undermine its economic and strategic relationship with the United States because doing so could have dire economic consequences. Still, there are limits to how far China will go in supporting western diplomatic initiatives if they would be significantly detrimental to Chinese investments abroad, as made evident by its opposition to severe economic sanctions on Iran. Nevertheless, China seeks to assure western actors that its oil diplomacy "is driven by economic rather than political necessity and seeks cooperation rather than confrontation" (Dannreuther, 2011, p. 1363). Understanding China's investment in international pariahs as merely an outgrowth of market forces, as opposed to a challenge to

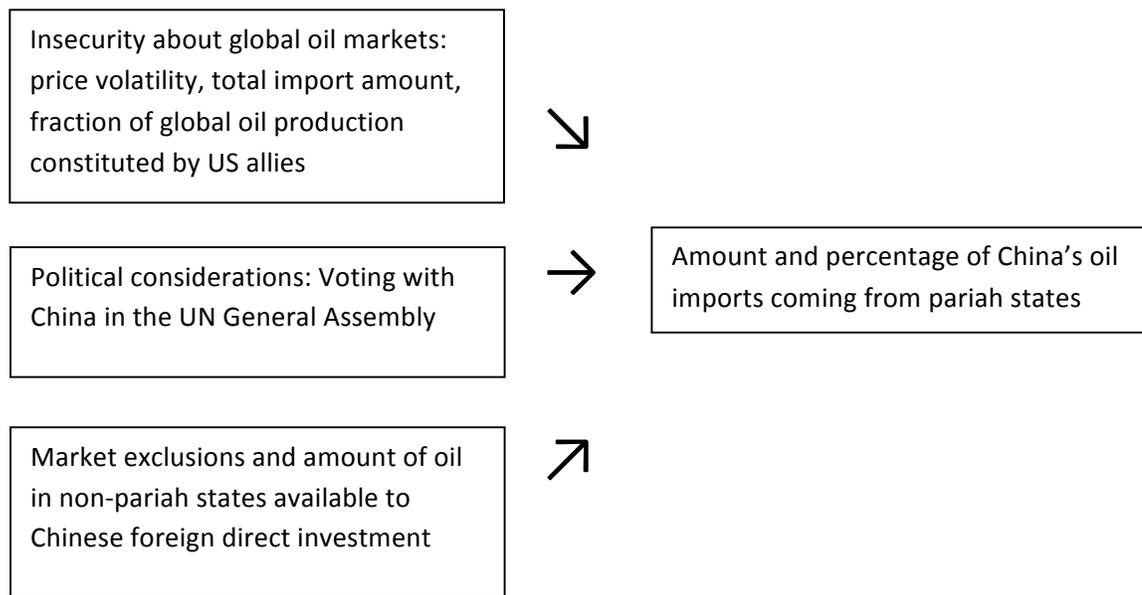
American power, has important implications for perspectives regarding the peacefulness of China's rise and the potential for cooperation between China and other major oil importing countries like the United States and Japan.

### **Conclusion**

In the end, insecurity, political considerations, and market exclusions all likely play a role in driving China's oil diplomacy and its energy deals with pariahs. Yet market exclusions should be considered the key driver because the argument that the states whose oil resources China invests in is largely determined by which states have oil resources open to foreign direct investment that have not yet been snatched up by the multinational oil companies has the most explanatory power. Especially notable is that the market exclusions argument is the only one that does not require ascribing certain political beliefs or goals to China, thus allowing these to be flexible rather than constituting challengeable assumptions of the argument. Furthermore, unlike the arguments in support of insecurity or political balancing as the most crucial factors, this market exclusion argument remains unrefuted in the literature. Since Dannreuther (2011) and Zweig and Jianhai (2005) directly address the other two schools of thought and challenge their assumptions, their arguments utilize a holistic analysis that lends them great credibility. Still, the literature lacks a systematic and quantitative assessment comparing all three drivers alongside one another to identify which is the most important factor in shaping China's oil diplomacy and energy deals with pariahs. This, then, is what my study seeks to accomplish.

### III. MODEL OF FACTORS DRIVING CHINA'S OIL DEALS WITH PARIAH STATES

As discussed previously, scholars have identified several different factors potentially driving China to cut energy deals with pariah states, including insecurity, political considerations, and market exclusions, but a methodical analysis of their importance and impact is lacking in the existing literature. The following model will be utilized to assess these factors:



In correlation to this model I have three hypotheses regarding China's oil import behavior:

- i. As China's insecurity about global oil markets increases, a greater percentage of China's oil imports will come from pariah states.
- ii. As China's political considerations or motivations increase, a greater percentage of China's oil imports will come from pariah states.
- iii. As China faces more market exclusions, a greater percentage of China's oil imports will come from pariah states.

The following section will discuss in detail how each of the factors included in this model will be measured, including which types of data are used as representative of the underlying factors and how these will be analyzed to test the hypotheses.

### **How to Measure the Drivers of China's Importing of Oil from Pariah States**

The literature discusses China's oil diplomacy and its energy deals with pariah states like Iran and Sudan, suggesting that there are three main variables driving China to take such action: insecurity about the global oil market, political considerations, and market exclusions and the relatively small amount of oil open to Chinese foreign direct investment. However, none of the existing literature takes an empirical approach to investigating and measuring the impact of each of these variables on China's willingness to source its oil imports from countries whose regimes may be out of favor with the international community. As such, this study seeks to do just that, namely to quantify each of the variables and assess their relationship to one another in order to test whether increased insecurity, political considerations, and market exclusions do in fact cause China to import a greater percentage of its oil from countries whose governments are not supported by the broader international community.

Operationalizing these variables is no easy task, which is one likely reason why an empirical study has yet to be performed on the subject. Still, I endeavor to create valid and reliable measures for each of the concepts encompassed by this research question. To begin, I will generate values for the dependent variable, which has to do with the extent of China's oil deals with pariah states, by using data on China's oil imports and country freedom scores from Freedom House. A composite measure of the degree of freedom of the source countries of China's oil imports was constructed by selecting the countries that provided at least three percent

of China's oil imports in a given year and multiplying the percentage share of China's imports that each of those countries supplied by each country's average Freedom House score to create a weight for each country. These weights were subsequently added up for each year and divided by the total percentage of oil imports represented by the selection of countries for that year to arrive at a final composite score for each year. This continuous variable begins in the year 1992 and runs through 2010, because those are the years for which data on China's oil imports by source country exists. This is logical because China did not become a net oil importing country until 1993. Furthermore, this is a sensible time period because it excludes any Cold War considerations and machinations, and because it is during these years that China's energy demand burgeoned, leading the government and state-owned oil companies to begin looking for, investing in, and securing oil resources abroad.

Next, a measure of political considerations will be created by utilizing voting records on United Nations (UN) resolutions. This measure will be constructed in very similar fashion to the freedom index measure, namely by using weights based on the share of China's oil imports that each country provided (using only countries that supplied at least a three percent share) to calculate a composite score for each year. Specifically, I will quantify the degree to which China seeks to utilize its energy alliances for the political purpose of creating political allies and balancing against the United States by calculating the percentage of times a country voted with China in opposition to the US on UN General Assembly resolutions each year, weighted by the percentage of China's oil imports originating from that country. This data was compiled by utilizing the United Nations Bibliographic Information System to look up all the voting records for each resolution that was voted on in the UN General Assembly each year. The resolutions on which China and the United States voted in opposition to each other were selected, and for each

country that made up at least three percent of China's imports each year, the number of times they voted in support of China against the United States was totaled and used to calculate a percentage. While this measure of China's political considerations in cutting energy deals with various states around the world may not be the most valid, it was chosen because data on UN voting records is available and reliable. The concerns about validity stem from the fact that China's political considerations may not feature prominently or even include securing voting allies within the UN, although their efforts to obviate recognition of Taiwan as a sovereign state would suggest otherwise. Another issue arises from the fact that states may have voted a certain way regardless of whether they were exporting significant amounts of oil to China. Still, for my considerations it is not of vital importance to be able to differentiate whether a country was voting similarly to China before the two countries concluded an energy deal or whether it began voting with China after they became energy partners. Arguably, both outcomes can be attributed to political considerations, the first case being China choosing to source its oil imports from a particular country because it seems to share a certain ideology, and the second being China selecting oil partner countries to induce them to become its voting partner in the UN. The only time this assumption would fail and the measure would lack validity is if a country changed its voting behavior to match that of China's after the two countries struck oil deals, but for reasons completely unrelated to their new partnership with China. (For example, rather than being encouraged by China to vote in a particular manner, a new government with an ideology different from the previous one comes to power and changes its voting preferences in the UN, coincidentally to preferences shared by China.) Nevertheless, given constraints on time and resources, this is the best measure of the political considerations variable because it utilizes data

from a trustworthy source and can encapsulate China's search for allies to collectively balance against the US in the international system (at least within the UN).

Designing a measure for China's insecurity about global oil markets is more difficult, as such a multitude of considerations contribute to feelings of insecurity, and it is near impossible to discover which of these weigh most heavily in China's security fears without performing a survey of top government officials and decision-makers. Still, the literature has suggested a number of different components, so a composite index of insecurity will be created in the hopes of avoiding giving any one measure (that may not actually be of great relevance for the Chinese government) too much weight. This insecurity index will include the percentage of world oil production by states that have alliances with the United States, which provides a quantification of China's concerns that the global oil market is dominated and can be influenced by the West. Since China is also worried about price volatility in the global oil market, the composite measure of insecurity will take into account the size of the range of oil prices within a year (greater range = greater volatility = more insecurity). Finally, the total amount of oil that China imports each year will be included because arguably greater levels of oil imports mean increased dependence on foreign oil suppliers. The index measure will be calculated by averaging the standardized values of each of those components to create an index score.

To measure the effect of market exclusions and the argument that because China was a latecomer to foreign oil investment and development, there are simply not that many oil reserves remaining that are open to Chinese investment, thus driving it to do business with states that Western countries and their oil companies have largely avoided, this study had sought to use data on the amount of oil available to foreign direct investment (FDI). However, since this data is unavailable a more qualitative method will be employed to examine the market availability and

rules regarding foreign FDI in the countries which are large oil exporters but not major sources of oil for China.

The method I will use to examine the impact of the two independent variables of insecurity and political considerations on the dependent variable of the composite degree of freedom of the countries from which China imports its oil is multivariate linear regression. Ultimately, this research design is fairly ambitious and robust in its measures and requisite data collection, although the qualitative discussion of oil open to investment and market exclusions is probably the weakest, meaning care will be need when making conclusions and generalizations about the effect of this variable. Still, this analysis will move the literature forward by providing a meticulous empirical study of the drivers of China's energy deals with pariah states.

#### **IV. ANALYSIS OF CHINA'S OIL IMPORTS 1992-2010**

##### **Introduction**

This analysis examines the different factors driving the selection of states from which China chooses to import its oil, with specific attention paid to states like Iran and Sudan that are considered pariahs or are in disfavor in the Western community. The study seeks to investigate to what extent each of the three factors included in this analysis—namely insecurity about global oil markets, political considerations, and market exclusions—influence and affect from which countries China imports its oil. The goal is to test not only whether each of the hypotheses associated with each factor holds, but also to explore which has the strongest effect, or in other words, which is the most important for China's decision about which countries to import oil from. Each of the variables will be presented and discussed in detail in the following sections, along with the analysis and its results.

##### **Results**

###### *Dependent Variable: Freedom Index Of Oil Import Source Countries*

The dependent variable represents a composite measure of the level of freedom (using Freedom House scores) of the countries from which China imports its oil. Freedom House ratings are based on a scale from 7 to 1, with 1 being the most free. In the table below, the composite scores are shown both on such a 7 to 1 scale as well as on a proportionate 0 to 1 score, with 1 being more free in both cases. This measure is intended to be representative of the extent of China's oil deals with pariahs, because arguably China will import oil from the countries with which it makes deals—it is largely the intention of such deals to secure oil supplies to meet China's rising demand—and whether a state is a pariah should be to some degree reflected in its Freedom

House score. Thus, the closer the composite score is to 1, the less oil China is importing from pariah states. The table below shows the countries that constituted at least three percent of China's oil imports for each year, along with the exact percentage each country provided, their Freedom House Scores, and the composite score. I have included all this information because I believe it instructive to look at which nations were the most important suppliers of China's crude oil each year. Early on, China only imported significant amounts of oil from countries within Asia and the Middle East—those that are relatively nearby. It is only later that African countries like Angola, Congo, Nigeria, and Sudan begin to play a role. The rapid rise in significance of Saudi Arabia and Iran, along with Angola, is especially notable.

The first year for which the dependent variable was measured, 1992, is when it has the highest value, meaning China's source countries are the freest overall in 1992. The following year, when China becomes a net importer and begins importing significant amounts from countries like Angola and Libya, which have poor freedom ratings, the composite freedom score drops fairly drastically, as can be easily seen in the chart that follows the tables below. After this, the score has minor fluctuations but never again surpasses 0.2 except for in 1999 when China briefly imports more from Nigeria, which is fairly free, while countries like Iraq, Angola, and Sudan, which have poor freedom scores, are not major sources. Even though the overall score does not change much, the countries which are the most important sources of China's oil imports do. From originally supplying 41.97 percent of China's oil imports in 1992, Indonesia declines in significance, providing less than 10 percent of imports by 2000 and less than 3 percent by 2006. Over time, Saudi Arabia replaces Indonesia and Oman as China's most import supplier of crude oil. First surpassing the three percent threshold for inclusion in the composite freedom measure in 1998, Saudi Arabia quickly grows in importance to provide over 20 percent

of China's imports of crude oil in 2008. The 1999 Strategic Oil Cooperation agreement between China and Saudi Arabia likely helped to facilitate the rapid expansion of oil trade between the countries. Other countries that have risen in significance for China's oil imports are Iran and to some extent Sudan, along with the Central Asian states of Russia and Kazakhstan. Only very recently do South American countries like Venezuela and Brazil appear in the variable, reflective of China's fairly recent turn of attention to the region, and hinting at a growing relationship that is likely to expand in the future. It also seems to show that China is making progress in its attempts to diversify its sources of crude oil, as by 2010 it imports significant amounts of oil from countries in Asia, the Middle East, Africa, and South America—all the regions of the world except for Europe and North America.

**Table 1: Significant Sources of China's Oil Imports and Composite Freedom Scores**

1992				1993				1994			
Country	Import %	FH Score	Weight	Country	Import %	FH Score	Weight	Country	Import %	FH Score	Weight
Indonesia	41.97	5.5	230.835	Indonesia	25.64	6.5	166.66	Indonesia	38.27	6.5	248.755
Malaysia	4.06	4.5	18.27	Malaysia	3.27	4.5	14.715	Vietnam	4.94	7	34.58
Papua New Guinea	4.57	2.5	11.425	Papua New Guinea	4.95	3	14.85	Papua New Guinea	6.49	3	19.47
Australia	4.77	1	4.77	Oman	26.09	6	156.54	Oman	27.28	6	163.68
Oman	26.95	5.5	148.225	Yemen	10.56	4.5	47.52	Yemen	10.19	5.5	56.045
Yemen	3.86	5	19.3	UAE	3.65	6	21.9				
				Angola	7.81	7	54.67				
				Libya	4.52	7	31.64				
	Total %				Total %				Total %		
	86.18		432.825		86.49		508.495		87.17		522.53
Composite Score (7 to 1 scale) 5.022337				Composite Score (7 to 1 scale) 5.8792346				Composite Score (7 to 1 scale) 5.9943788			
Composite Score (0 to 1 scale) 0.2825233				Composite Score (0 to 1 scale) 0.1601093				Composite Score (0 to 1 scale) 0.1436602			

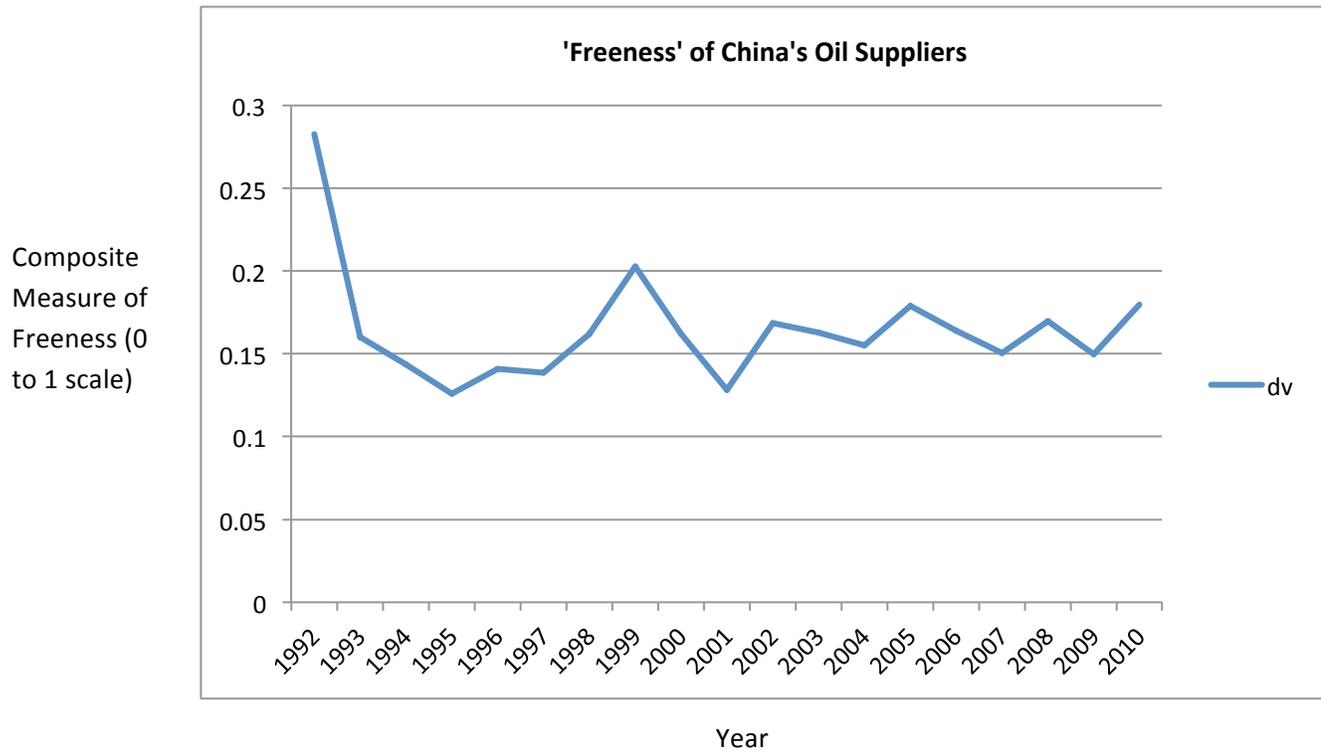
1995				1996				1997			
Country	Import %	FH Score	Weight	Country	Import %	FH Score	Weight	Country	Import %	FH Score	Weight
Indonesia	30.89	6.5	200.785	Indonesia	27.84	6	167.04	Indonesia	18.57	6	111.42
Vietnam	4.45	7	31.15	Vietnam	4.45	7	31.15	Vietnam	4.23	7	29.61
Malaysia	3.44	4.5	15.48	Oman	25	6	150	Oman	25.47	6	152.82
Oman	21.38	6	128.28	Yemen	16.65	5.5	91.575	Yemen	11.43	5.5	62.865
Yemen	14.47	5.5	79.585	Iran	10.22	6.5	66.43	Iran	7.77	6.5	50.505
Iran	5.45	6.5	35.425	Angola	7.35	6	44.1	Angola	10.82	6	64.92
Angola	5.84	6	35.04								
	Total %				Total %				Total %		
	85.92		525.745		91.51		550.295		78.29		472.14
Composite Score (7 to 1 scale)				Composite Score (7 to 1 scale)				Composite Score (7 to 1 scale)			
6.1190061				6.0134958				6.0306553			
Composite Score (0 to 1 scale)				Composite Score (0 to 1 scale)				Composite Score (0 to 1 scale)			
0.1258563				0.1409292				0.1384778			

1998				1999				2000			
Country	Import %	FH Score	Weight	Country	Import %	FH Score	Weight	Country	Import %	FH Score	Weight
Iran	13.25	6	79.5	Iran	10.79	6	64.74	Iran	9.96	6	59.76
Saudi Arabia	6.62	7	46.34	Saudi Arabia	6.82	7	47.74	Saudi Arabia	8.16	7	57.12
Oman	21.2	6	127.2	Oman	13.71	6	82.26	Oman	22.29	5.5	122.595
Yemen	14.8	5.5	81.4	Yemen	11.29	5.5	62.095	Yemen	5.14	5.5	28.27
Angola	4.04	6	24.24	Nigeria	3.74	3.5	13.09	Iraq	4.53	7	31.71
Vietnam	3.17	7	22.19	Vietnam	4.13	7	28.91	Sudan	4.72	7	33.04
Indonesia	12.51	5	62.55	Indonesia	10.8	4	43.2	Angola	12.29	6	73.74
								Vietnam	4.5	6.5	29.25
								Indonesia	6.61	3.5	23.135
	Total %				Total %				Total %		
	75.59		443.42		61.28		342.035		78.2		458.62
Composite Score (7 to 1 scale)				Composite Score (7 to 1 scale)				Composite Score (7 to 1 scale)			
5.8661199				5.5815111				5.8647059			
Composite Score (0 to 1 scale)				Composite Score (0 to 1 scale)				Composite Score (0 to 1 scale)			
0.1619829				0.2026413				0.1621849			

2001				2002				2003			
Country	Import %	FH Score	Weight	Country	Import %	FH Score	Weight	Country	Import %	FH Score	Weight
Iran	18	6	108	Saudi Arabia	16.41	7	114.87	Saudi Arabia	16.65	7	116.55
Saudi Arabia	14.57	7	101.99	Iran	15.32	6	91.92	Iran	13.6	6	81.6
Oman	13.51	5.5	74.305	Oman	11.59	5.5	63.745	Oman	10.18	5.5	55.99
Yemen	3.8	6	22.8	Yemen	3.26	5.5	17.93	Yemen	7.68	5	38.4
Sudan	8.25	7	57.75	Angola	8.22	5.5	45.21	Angola	11.09	5.5	60.995
Angola	6.3	6	37.8	Sudan	9.26	7	64.82	Congo	3.72	5	18.6
Equatorial Guinea	3.56	6	21.36	Russia	4.36	5	21.8	Sudan	6.87	7	48.09
Vietnam	5.58	6.5	36.27	Norway	3.04	1	3.04	Russia	5.77	5	28.85
Indonesia	4.39	3.5	15.365	Indonesia	4.66	3.5	16.31	Indonesia	3.66	3.5	12.81
				Vietnam	5.1	6.5	33.15	Vietnam	3.85	6.5	25.025
	Total %				Total %				Total %		
	77.96		475.64		81.22		472.795		83.07		486.91
	Composite Score (7 to 1 scale) 6.1010775				Composite Score (7 to 1 scale) 5.8211647				Composite Score (7 to 1 scale) 5.8614422		
	Composite Score (0 to 1 scale) 0.1284175				Composite Score (0 to 1 scale) 0.168405				Composite Score (0 to 1 scale) 0.1626511		

2004				2005				2006			
Country	Import %	FH Score	Weight	Country	Import %	FH Score	Weight	Country	Import %	FH Score	Weight
Saudi Arabia	14.04	7	98.28	Saudi Arabia	17.45	6.5	113.425	Saudi Arabia	16.44	6.5	106.86
Iran	10.78	6	64.68	Iran	11.23	6	67.38	Iran	11.55	6	69.3
Oman	13.31	5.5	73.205	Oman	8.53	5.5	46.915	Oman	9.08	5.5	49.94
Yemen	4	5	20	Yemen	5.49	5	27.45	Yemen	3.13	5	15.65
Angola	13.2	5.5	72.6	Angola	13.74	5.5	75.57	Angola	16.15	5.5	88.825
Congo	3.89	4.5	17.505	Equatorial Guinea	3.02	6.5	19.63	Sudan	3.34	7	23.38
Sudan	4.7	7	32.9	Congo	4.36	4.5	19.62	Congo	3.73	5	18.65
Russia	8.77	5.5	48.235	Sudan	5.21	7	36.47	Equatorial Guinea	3.63	6.5	23.595
Vietnam	4.35	6.5	28.275	Russia	10.05	5.5	55.275	Russia	11	5.5	60.5
				Indonesia	3.21	3.5	11.235				
	Total %				Total %				Total %		
	77.04		455.68		82.29		472.97		78.05		456.7
	Composite Score (7 to 1 scale) 5.9148494				Composite Score (7 to 1 scale) 5.7476				Composite Score (7 to 1 scale) 5.8513773		
	Composite Score (0 to 1 scale) 0.1550215				Composite Score (0 to 1 scale) 0.1789143				Composite Score (0 to 1 scale) 0.164089		



**Figure 2: Composite Freedom Score of China's Oil Suppliers**

### *Index Measure of Insecurity*

The index measure of insecurity was created by calculating an index score from three factors believed to contribute to China's energy insecurity: the fraction of total global oil production that is produced by countries that are United States allies,<sup>1</sup> the volatility of oil prices as represented by the difference between the maximum and the minimum oil price each year in dollars, and the total amount of oil that China imports each year. Values for each of these three components of the index measure are provided in the table below.

<sup>1</sup> United States allies are considered to be those countries designated in accordance with § 517 of the Foreign Assistance Act of 1961 (22 U.S.C. 2321k) as a major non-NATO ally for purposes of the Foreign Assistance Act of 1961 and the Arms Export Control Act (22 U.S.C. 2751 et seq.) (22 U.S.C. 2403(q)). The following countries have been designated as major non-NATO allies: Argentina (1998), Australia (1989), Bahrain (2002), Egypt (1989), Israel (1989), Japan (1989), Jordan (1996), Kuwait (2004), Morocco (2004), New Zealand (1997), Pakistan (2004), the Philippines (2003), Thailand (2003), Republic of Korea (1989), and Afghanistan (2012).

**Table 3: Components of the Index Measure of Insecurity**

Year	Ally Production Fraction	Volatility (\$ Price Range)	Total Oil Imports (10K tons)
1992	0.02	4.27	1135.79
1993	0.02	6.48	1567.12
1994	0.02	6.03	1234.59
1995	0.02	3.08	1708.99
1996	0.02	7.67	2261.69
1997	0.02	7.99	3547.15
1998	0.03	6.58	2732.26
1999	0.03	15.69	3661.37
2000	0.03	11.04	7026.53
2001	0.03	13.07	6025.54
2002	0.03	13.77	6940.77
2003	0.03	11.29	9112.63
2004	0.06	21.75	12281.55
2005	0.06	24.4	12708.32
2006	0.06	18.39	14518.03
2007	0.06	46.42	16317.55
2008	0.07	109.54	17889.3
2009	0.06	43.33	20378.89
2010	0.06	21.83	23931.14

The reasons for inclusion of each of these components are as follows. First, China's insecurity is thought to heighten as it imports increasing total amounts of oil, as this means it is increasingly dependent on foreign energy sources to fuel its economic growth. Next, large price fluctuations contribute to China's feelings of insecurity regarding the global oil market, because such volatility implies instability and exacerbates China's fear of price shocks. Finally, the amount of oil produced by US allies as a fraction of total global oil production is intended to get at China's fears about US dominance in oil producing regions.

*Political Considerations*

The composite vote percentages that make up the political considerations variable are intended to be representative of China's political considerations in that if a country votes with China against the US a greater percentage of the time, they are more likely to have more extensive shared political beliefs and interests with China, which according to the political considerations argument would be reason for China to develop deeper energy ties with and thus import more oil from that country. Furthermore, the fact that only cases in which China and the United States voted in opposition to each other were used captures the aspect that China may be seeking to create a coalition of states to balance against the US. The table below gives the fraction of total resolutions on which each country voted with China against the US. All the composite scores are greater than eighty percent, and many are even above ninety percent, meaning the countries from which China imports oil largely vote in accordance with China.

**Table 4: UN Voting Patterns of China's Oil Supplier Countries**

1992				1993				1994			
Country	Import %	Vote %	Weight	Country	Import %	Vote %	Weight	Country	Import %	Vote %	Weight
Indonesia	41.97	0.9512195	39.922683	Indonesia	25.64	1	25.64	Indonesia	38.27	1	38.27
Malaysia	4.06	0.9512195	3.8619512	Malaysia	3.27	0.972973	3.1816216	Vietnam	4.94	1	4.94
Papua New Guinea	4.57	0.4146341	1.894878	Papua New Guinea	4.95	0.6756757	3.3445946	Papua New Guinea	6.49	0.625	4.05625
Australia	4.77	0.2439024	1.1634146	Oman	26.09	0.8918919	23.269459	Oman	27.28	0.90625	24.7225
Oman	26.95	0.7560976	20.376829	Yemen	10.56	0.8918919	9.4183784	Yemen	10.19	0.90625	9.2346875
Yemen	3.86	0.9268293	3.577561	UAE	3.65	0.8918919	3.2554054				
				Angola	7.81	0.7567568	5.9102703				
				Libya	4.52	1	4.52				
	Total %				Total %				Total %		
	86.18		70.797317		86.49		78.53973		87.17		81.223431
Composite Score				Composite Score				Composite Score			
0.8215052				0.9080787				0.931782			

1995				1996				1997			
Country	Import %	Vote %	Weight	Country	Import %	Vote %	Weight	Country	Import %	Vote %	Weight
Indonesia	30.89	0.9574468	29.575532	Indonesia	27.84	0.952381	26.514286	Indonesia	18.57	0.9761905	18.127857
Vietnam	4.45	0.9574468	4.2606383	Vietnam	4.45	0.952381	4.2380952	Vietnam	4.23	1	4.23
Malaysia	3.44	0.893617	3.0740426	Oman	25	0.9047619	22.619048	Oman	25.47	0.9047619	23.044286
Oman	21.38	0.9148936	19.560426	Yemen	16.65	0.8095238	13.478571	Yemen	11.43	0.9047619	10.341429
Yemen	14.47	0.5957447	8.6204255	Iran	10.22	0.952381	9.7333333	Iran	7.77	0.9761905	7.585
Iran	5.45	0.9148936	4.9861702	Angola	7.35	0.8571429	6.3	Angola	10.82	0.6904762	7.4709524
Angola	5.84	0.2340426	1.3668085								
	Total %				Total %				Total %		
	85.92		71.444043		91.51		82.883333		78.29		70.799524
Composite Score				Composite Score				Composite Score			
0.8315182				0.9057298				0.904324			

1998				1999				2000			
Country	Import %	Vote %	Weight	Country	Import %	Vote %	Weight	Country	Import %	Vote %	Weight
Iran	13.25	0.9310345	12.336207	Iran	10.79	0.972973	10.498378	Iran	9.96	0.9142857	9.1062857
Saudi Arabia	6.62	1	6.62	Saudi Arabia	6.82	0.9189189	6.267027	Saudi Arabia	8.16	0.9428571	7.6937143
Oman	21.2	0.9655172	20.468966	Oman	13.71	0.9189189	12.598378	Oman	22.29	1	22.29
Yemen	14.8	0.9310345	13.77931	Yemen	11.29	0.8648649	9.7643243	Yemen	5.14	0.9714286	4.9931429
Angola	4.04	0.862069	3.4827586	Nigeria	3.74	0.8648649	3.2345946	Iraq	0		0
Vietnam	3.17	1	3.17	Vietnam	4.13	0.972973	4.0183784	Sudan	4.72	0.9714286	4.5851429
Indonesia	12.51	1	12.51	Indonesia	10.8	0.972973	10.508108	Angola	12.29	0.5714286	7.0228571
								Vietnam	4.5	1	4.5
								Indonesia	6.61	1	6.61
	Total %				Total %				Total %		
	75.59		72.367241		61.28		56.889189		73.67		66.801143
Composite Score				Composite Score				Composite Score			
0.9573653				0.9283484				0.9067618			

2001				2002				2003			
Country	Import %	Vote %	Weight	Country	Import %	Vote %	Weight	Country	Import %	Vote %	Weight
Iran	18	1	18	Saudi Arabia	16.41	1	16.41	Saudi Arabia	16.65	0.9814815	16.341667
Saudi Arabia	14.57	0.9512195	13.859268	Iran	15.32	0.9166667	14.043333	Iran	13.6	0.9814815	13.348148
Oman	13.51	1	13.51	Oman	11.59	1	11.59	Oman	10.18	1	10.18
Yemen	3.8	0.9512195	3.6146341	Yemen	3.26	0.9583333	3.1241667	Yemen	7.68	1	7.68
Sudan	8.25	1	8.25	Angola	8.22	0.8541667	7.02125	Angola	11.09	0.7407407	8.2148148
Angola	6.3	0.804878	5.0707317	Sudan	9.26	1	9.26	Congo	3.72	0.7222222	2.6866667
Equatorial Guinea	3.56	0.7804878	2.7785366	Russia	4.36	0.7916667	3.4516667	Sudan	6.87	0.962963	6.6155556
Vietnam	5.58	0.9512195	5.3078049	Norway	3.04	0.9285714	2.8228571	Russia	5.77	0.8148148	4.7014815
Indonesia	4.39	0.9268293	4.0687805	Indonesia	4.66	1	4.66	Indonesia	3.66	1	3.66
				Vietnam	5.1	1	5.1	Vietnam	3.85	0.9814815	3.7787037
	Total %				Total %				Total %		
	77.96		74.459756		81.22		77.483274		83.07		77.207037
Composite Score				Composite Score				Composite Score			
0.9551021				0.9539925				0.9294214			

2004				2005				2006			
Country	Import %	Vote %	Weight	Country	Import %	Vote %	Weight	Country	Import %	Vote %	Weight
Saudi Arabia	14.04	0.9803922	13.764706	Saudi Arabia	17.45	0.9827586	17.149138	Saudi Arabia	16.44	0.9545455	15.692727
Iran	10.78	0.9607843	10.357255	Iran	11.23	0.9482759	10.649138	Iran	11.55	0.9545455	11.025
Oman	13.31	0.9803922	13.04902	Oman	8.53	0.9827586	8.382931	Oman	9.08	0.9545455	8.6672727
Yemen	4	0.9803922	3.9215686	Yemen	5.49	0.9827586	5.3953448	Yemen	3.13	0.9545455	2.9877273
Angola	13.2	0.6470588	8.5411765	Angola	13.74	0.4482759	6.1593103	Angola	16.15	0.7878788	12.724242
Congo	3.89	0.627451	2.4407843	Equatorial Guinea	3.02	0.0344828	0.1041379	Sudan	3.34	0.9848485	3.2893939
Sudan	4.7	0.9803922	4.6078431	Congo	4.36	0.5517241	2.4055172	Congo	3.73	0.9545455	3.5604545
Russia	8.77	0.7843137	6.8784314	Sudan	5.21	1	5.21	Equatorial Guinea	3.63	0.1363636	0.495
Vietnam	4.35	0.9803922	4.2647059	Russia	10.05	0.8448276	8.4905172	Russia	11	0.8181818	9
				Indonesia	3.21	0.9827586	3.1546552				
	Total %				Total %				Total %		
	77.04		67.82549		82.29		67.10069		78.05		67.441818
Composite Score				Composite Score				Composite Score			
0.8803932				0.8154173				0.8640848			

2007				2008				2009			
Country	Import %	Vote %	Weight	Country	Import %	Vote %	Weight	Country	Import %	Vote %	Weight
Saudi Arabia	16.14	0.9482759	15.305172	Saudi Arabia	20.33	0.9272727	18.851455	Saudi Arabia	20.59	0.9565217	19.694783
Iran	12.59	0.9655172	12.155862	Iran	11.92	1	11.92	Iran	11.36	0.9782609	11.113043
Oman	8.38	1	8.38	Oman	8.15	0.9636364	7.8536364	Oman	5.71	1	5.71
Angola	15.32	0.5689655	8.7165517	Kuwait	3.3	0.9272727	3.06	Iraq	3.51	0.9782609	3.4336957
Sudan	6.32	1	6.32	Angola	16.71	0.8363636	13.975636	Kuwait	3.47	0.9565217	3.3191304
Russia	8.9	0.8103448	7.212069	Sudan	5.87	0.9636364	5.6565455	Angola	15.79	0.8913043	14.073696
Kazakhstan	3.68	0.8793103	3.2358621	Russia	6.51	0.8363636	5.4447273	Sudan	5.98	1	5.98
				Kazakhstan	3.17	0.9090909	2.8818182	Libya	3.11	1	3.11
				Venezuela	3.62	0.9636364	3.4883636	Russia	7.51	0.8043478	6.0406522
	Total %				Total %				Total %		
	71.33		61.325517		79.58		73.132182		77.03		72.475
Composite Score				Composite Score				Composite Score			
0.8597437				0.9189769				0.9408672			

2010			
Country	Import %	Vote %	Weight
Saudi Arabia	18.65	0.9333333	17.406667
Iran	8.91	1	8.91
Oman	6.63	1	6.63
Iraq	4.7	0.9333333	4.3866667
Kuwait	4.11	0.9555556	3.9273333
Angola	16.46	0.8666667	14.265333
Sudan	5.26	1	5.26
Libya	3.08	0.9333333	2.8746667
Russia	6.37	0.8	5.096
Kazakhstan	4.2	0.8888889	3.7333333
Brazil	3.36	0.9111111	3.0613333
	Total %		
	81.73		75.551333
Composite Score			
0.9244015			

*Analysis*

A multivariate regression performed to assess the effects of insecurity and political considerations on the dependent variable of the composite weighted freedom of China's oil supplying countries, intended to be correlated to the energy deals China strikes as part of its oil diplomacy, had the following results. Both the insecurity and political considerations variables have negative relationships with the dependent variable, although the political considerations variable seems to have a much stronger effect on which countries China imports oil from. These negative correlations correspond to the hypotheses that as the composite vote score representative of political considerations increased, the 'freeness' measure would decrease, meaning China is doing more business with pariahs. Similarly, as insecurity increases, the 'freeness' measure should also decrease. However, these results were not statistically significant, which likely at least in part results from the fact that the time series only runs from 1992 through 2010, which does not provide many observations to analyze using statistical tests. However, since China only became a net oil importer in 1993, there is not much use in analyzing its oil imports before 1992, and the data for this is limited anyway. The results from the multivariate regression are summarized in the table below.

**Table 5: Effect of Political Consideration and Insecurity on Composite Freeness**

Variable	Coefficient	(Std. Error)	P >   t
Composite Vote Ratio (Political Considerations)	<b>-0.252</b>	<b>(0.18)</b>	<b>0.179</b>
Index Measure of Insecurity	<b>-0.001</b>	<b>(0.01)</b>	<b>0.876</b>

Unfortunately, not enough data is available to construct a valid measure for the factor of market exclusions, thus it could not be included in this regression. However, the following section analyzes the market forces factor qualitatively in an attempt to provide some useful insight into how it affects the behavior of Chinese oil companies and the deals they make.

### *Market Exclusions*

To investigate the market exclusions factor, this study will compare the countries that provided at least three percent of China's crude oil imports in 2010 to the top crude oil exporters globally in 2010 and examine more in depth those countries that are major exporters but not significant suppliers for China, as this would suggest China has not invested significantly in those countries.

**Table 6: China's Significant Oil Suppliers vs. Top Crude Exporters Globally**

2010 China's Biggest Import Countries		2010 Exporters of Crude Oil Including Lease Condensate (thousand barrels per day)		
Country	Import %	Rank	Country	Amount
Saudi Arabia	18.65	1	Saudi Arabia	6844.096
Angola	16.46	2	Russia	4887.826
Iran	8.91	3	Iran	2377.195
Oman	6.63	4	Nigeria	2340.587
Russia	6.37	5	UAE	2142.1
Sudan	5.26	6	Angola	1928.107
Iraq	4.7	7	Iraq	1913.97
Kazakhstan	4.2	8	Norway	1601.572
Kuwait	4.11	9	Mexico	1460.27
Brazil	3.36	10	Canada	1439.856
Libya	3.08	11	Kazakhstan	1406.183
		12	Kuwait	1395.026
		13	Libya	1378.396
		14	Qatar	1106.123

Source: <http://www.eia.gov/cfapps/ipdbproject/iedindex3.cfm?tid=5&pid=57&aid=4&cid=regions&syid=2010&eyid=2010&unit=TBPD>

The countries which are among the top fourteen crude oil exporters globally but don't provide at least three percent of China's crude oil imports are highlighted in yellow in the chart. Understanding if there are any barriers to Chinese investment in those countries is important because it would support the argument that the countries with which China has made oil deals and thus imports significant amounts of oil from is a result of market forces—even if China wanted to invest in other countries, the oil sectors in those countries have barriers to foreign direct investment or are already controlled by other oil companies, leaving Chinese oil companies to pick up the scraps in pariahs where investments might be more risky.

Especially given China's interest in other African oil producers, it may be surprising that Nigeria does not supply more of China's oil. Further investigation shows, however, that Nigeria's oil sector is already largely dominated by other international oil companies, and that Nigeria places limits on foreign direct investment in its oil and natural gas sectors. The international oil company most identified with Nigeria's oil industry is Shell, which has a joint venture with Nigeria National Petroleum Corporation (NNPC) that accounts for about half the country's production (Corporate Nigeria, 2010). Many of the other oil majors, including Total, Elf, ExxonMobil, ConocoPhillips, Chevron, and Eni, also have significant operations in the country. Furthermore, under the Nigerian Investment Promotion Commission Act foreign direct investment in the country's oil and gas sector is limited to existing joint ventures and new production sharing agreements (Corporate Nigeria, 2010). Thus the existence of constraints on FDI and a market largely saturated by western oil companies offers some explanation of why China has not been able to make oil deals with Nigeria similar to those it has made with countries like Iran and Sudan. Still, China has been investing heavily in Nigeria, with its FDI there now estimated to be around US \$6 billion, and about 75% of this is in the oil and gas sector

(Corporate Nigeria, 2010). Thus despite heavy competition, China is making efforts to invest in Nigeria's oil resources, which may bear fruit in increased oil supply to China in the future.

Next, oil production in the United Arab Emirates (UAE) is dominated by the country's state-owned Abu Dhabi National Oil Company (ADNOC) in partnership with just a few major international oil companies under long-term concession agreements. This in essence prevents new entrants like China, although the impending expiration of two of the long-term concession licenses could open up new opportunities for Chinese investment in the UAE. The international oil companies that currently hold these long-term production-sharing contracts in oil and gas include BP, Shell, Total, ExxonMobil, and Occidental Petroleum. Especially since it is considered unlikely that new oil fields will be discovered in the UAE, and thus there are essentially no large opportunities for investment in oil exploration either, China is unable to invest in the UAE's oil sector until one of the long-term concession agreements expires.

In Norway, which is Europe's largest oil exporter, the national oil company also dominates the oil sector. Statoil, which is 67 percent-owned by the Norwegian government, controls 80 percent of oil and gas production in Norway (USEIA, 2012b). Besides this, international oil companies also have a significant presence in the country, in large part because of a subsidy for exploration introduced by the Norwegian government in 2005. Clearly most of the oil market in Norway is already controlled either by Statoil or other western oil companies, thus not leaving much room for Chinese investment. Furthermore, most of Norway's oil is exported to other European countries, adding another potential political complication to Chinese investment in the country's petroleum industry.

The next major oil exporter that supplies surprisingly little oil to China is Mexico. However, this can be fairly easily explained by the fact that Mexico has constitutional limits on foreign involvement in the exploration, production, and ownership of the country's hydrocarbon resources, and thus the state-owned oil company *Petróleos Mexicanos* (PEMEX) dominates the oil and gas sectors in Mexico. Nevertheless, some reforms were passed in 2008 that allow PEMEX to conclude incentive-based service contracts with foreign oil companies, although these foreign companies still will not be able to attain any ownership rights. Still, it seems unlikely that China will be able to conclude with Mexico any oil deals of the scale or type that it has with other countries, especially since much of Mexico's oil is exported to the United States.

Although Canada is not a major supplier of crude to China, this may be more reflective of a lack of adequate delivery routes (pipelines to Canada's west coast) to export significant amounts of oil to China than a lack of Chinese investment in the country, because especially recently Chinese oil companies have been very active in Canada. Canada's oil sector is privatized and does not have the same strict limits on foreign direct investment that some of the previously discussed countries do. The only constraint stipulated by the Investment Canada Act is that any large investment must be of net benefit to Canada. Along with myriad Canadian private firms, Chevron, ConocoPhillips, Devon Energy, ExxonMobil, BP, Shell, Statoil, and Total are some of the companies with planned or current projects in Canada's oil sands. Still, Chinese companies have been successful in making large investments in Canada as well:

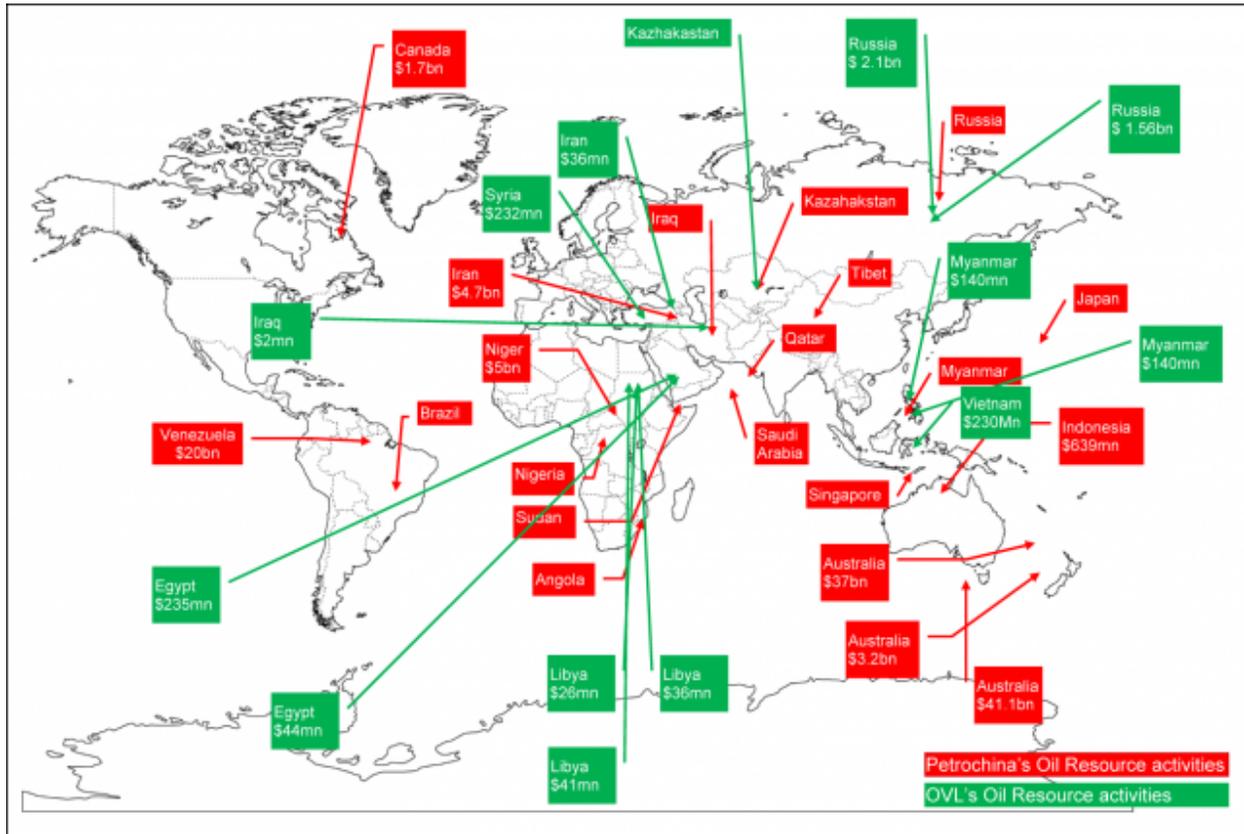
Chinese companies, including PetroChina and its China National Petroleum Corporation (CNPC) parent company, the China National Offshore Oil Corporation (CNOOC), and Sinopec, have invested in the oil sands and other parts of Canada's energy sector. PetroChina purchased sixty-percent stakes in the MacKay River and Dover projects from Athabasca Oil Sands Co. in January 2010, followed by full acquisition of MacKay River in January 2012. In 2010, Sinopec acquired ConocoPhillips' stake in Syncrude Canada. CNOOC purchased a minority stake in MEG Energy in 2005 (USEIA, 2012a, p.3).

There is great opportunity for China and Canada to develop a strong partnership on energy, especially if Canada is able to find a viable route for exporting large amounts of oil to China.

On the other hand, all aspects of Qatar's upstream and downstream oil sector are controlled by state-owned Qatar Petroleum, thus leaving little room for Chinese investment. Although some of Qatar's offshore oil fields are operated by international oil companies via production sharing agreements, it would be extremely difficult for Chinese oil companies to win large-scale oil deals in Qatar, which explains why China does not import a significant amount of oil from this country.

Another method for assessing the activity of China's oil companies and to what extent it is driven by market forces is to briefly compare it to another country in a similar situation. India, like China, has experienced a burgeoning energy demand, and its oil companies are also seeking resources abroad as fairly late entrants to the international oil market. The main difference is that India is a democracy and thus may have different political considerations. Thus, if the countries in which the companies of both countries invest are similar, this partially supports the idea that those are the countries where there are still investments to be made and the market is accessible. The following figure compares investments and acquisitions made by PetroChina, a Chinese state-owned company, and ONGC Videsh Ltd. (OVL), an Indian state-owned company. Although further research is necessary to make a full comparison and something other than cautious conclusions, at least at face value it seems that Indian and Chinese oil companies are making investments in similar sets of countries, which would support the idea that the countries in which they invest are largely determined by available market access.

**Figure 7: A Comparison of Chinese and Indian Oil Company Investments**



Source: <http://espacepolitique.revues.org/image.php?source=docannexe/image/2151/img-6-small640.png&titlepos=up>

Altogether, this qualitative investigation of market access to oil sectors seems to indicate that much of the activity of Chinese oil companies in terms of their investments abroad is governed by access to and exclusions from other countries' oil sectors.

## **V. DISCUSSION OF FINDINGS, LIMITATIONS, AND IMPLICATIONS**

### **Findings**

While my findings are inconclusive because they fail to pass the test of statistical significance, they do provide interesting clues to understanding the drivers of China's oil diplomacy and energy deals with pariah states. Results of the regression indicate that the political considerations variable has a stronger relationship with the dependent variable than does the variable for insecurity. This could mean that insecurity is in fact less important in shaping China's behavior to invest in and secure oil resources abroad, which in part may be due to China's changing perceptions of energy insecurity. As mentioned in the literature review, a recent shift in China's approach to addressing its insecurity is evident, from a more neomercantilist strategy to one that recognizes the value of the market and the importance of cooperation with other major oil importers through multilateral forums and organizations. This shift is not captured well by the measure for insecurity used in this study. Although the three factors considered in this study are not mutually exclusive, the examination of market exclusions suggests that this factor of market forces and exclusions is a significant driver of China's oil deals with particular countries, including pariahs.

### **Limitations**

These findings should be considered only within the context of the study's several limitations. To begin, quantifying concepts like insecurity and political considerations necessarily simplifies the complexity of such somewhat abstract ideas, which may imply that the study's findings are less applicable to the real world than desired, because the model is too idealistic and unsophisticated to adequately represent all the various actors and factors, and their interactions,

shape China's decision. In this sense, this study may be more useful as a heuristic model than as a definitive statement about China's perceived interests and the factors which drive China to engage in oil diplomacy and import oil from pariah states.

The model used to depict China's decision-making about the countries from which it imports oil implies a certain set of assumptions that may not always hold. The model and the manner in which the variables are calculated seem to assume that China consciously chooses each year from which countries they wish to import oil. Of course, the idea that leaders in Beijing are able to select how many barrels of oil to import from any given country to, for example, maximize political benefits in terms of gaining votes in the UN each year is far too intentionalist. Rather, China's freedom to actively select which countries to import oil from, and in what amounts, is constrained first of all by production capacities and market competition. Even if China may wish to source more of their oil imports from a particular country, that country may not have the ability to augment its production capacity. Furthermore, China is not the sole purchaser in the global oil market, and thus must deal with competition from other buyers. In addition, China's selection of states from which to import oil has some aspects of path dependence, because, for example, Chinese refineries are built to process specific types of crude oil. If China builds refineries to process the specific grade of oil produced by country X, it seems implausible that the following year China would simply choose to import that amount of oil from country Y instead, because this might render its refineries useless. This suggests that importing significant amounts of crude oil from a particular country over time makes it more likely that that country will continue to be a source for oil imports in the future. Finally, the model and variables utilized are severely limited by data availability. For example, many more factors likely influence China's insecurity than only total amount of imports, price volatility, and

amount of oil held by states that are US allies, but lack of adequate data for concepts such as Western dominance of oil markets preclude full inclusion of such concepts into the measure for insecurity.

Next, this study also has several technical limitations, including the limited number of cases available to statistically analyze, since the time series only runs from 1992 through 2010. While this time series is logical because China did not become a net oil importer until 1993, having fewer cases makes it more difficult to perform statistical analyses and regressions at high confidence levels because there simply aren't enough data points.

### **Final Conclusions**

While this study has attempted to assess the impacts of different factors that drive China's oil diplomacy and energy deals with pariahs, its findings have limited explanatory power. However, the study suggests that, as predicted in the literature review, market exclusions may be the most important driver of Chinese oil diplomacy with pariahs. Still, there is much room for future research in this field, especially in the context of changing Chinese perceptions of insecurity and the global oil market, along with its stance vis-à-vis the United States. A more rigorous and in-depth study of market access and rules regarding foreign direct investment around the world would add to the preliminary findings of this paper, as would a more detailed comparison between Chinese and Indian state-owned oil companies, both late entrants to the international oil market. This area of study carries special significance because of the implications that China's business with pariahs has on the ability of the United States and the international community to check rogue states and marginalize governments that hold no respect for international regimes. This has been especially salient in the cases of Iran and Sudan, where China has significant oil

investments and has been accused of blocking or watering down UN sanctions. Thus, this has created major new political-economic equations that have great bearing on the international system. Understanding the motives that drive China's oil diplomacy and development of energy alliances, then, can be hugely important for finding cooperative solutions to these dilemmas.

## REFERENCES

- Calder, K. E. (2006). Coping with energy insecurity: China's response in global perspective. *East Asia: An International Quarterly*, 23(3), 49-66. Retrieved from <http://search.proquest.com/docview/59751167?accountid=14496>
- Chen, S. (2008). Motivations behind china's foreign oil quest: A perspective from the chinese government and the oil companies. *Journal of Chinese Political Science*, 13(1), 79-104. doi: <http://dx.doi.org/10.1007/s11366-008-9017-7>
- Cornelius, P., & Story, J. (2007). China and global energy markets. *Orbis: A Journal of World Affairs*, 51(1), 5-20. Retrieved from <http://search.proquest.com/docview/862777630?accountid=14496>
- Corporate Nigeria. (2010). *The Business, Trade and Investment Guide 2010/2011*. Retrieved from <http://www.corporate-nigeria.com/assets/pdf/2010/cn-2010-energy.pdf>
- Dannreuther, R. (2011). China and global oil: Vulnerability and opportunity. *International Affairs (London)*, 87(6), 1345-1364. doi: <http://dx.doi.org/10.1111/j.1468-2346.2011.01040.x>
- Farhang, D. *Moving in the shadows of power: China's middle east energy strategy and the implications for american vital interests in the region*. *Masters Abstracts International*, , 1417-1417. Retrieved from <http://search.proquest.com/docview/60523475?accountid=14496>. (prod.academic\_MSTAR\_60523475; 201017771).
- Jiang, Wenran. (2006, April 12). Beijing's "New Thinking" on Energy Security. *China Brief*, 6(8), 1-3.
- Kreft, H. (2006). China's quest for energy: Resource diplomacy in a global market. *Policy Review*, (139) Retrieved from <http://search.proquest.com/docview/59756667?accountid=14496>
- United States Energy Information Administration (USEIA). (2012a). Canada. *Analysis Briefs*. Retrieved from <http://www.eia.gov/countries/analysisbriefs/Canada/canada.pdf>
- United States Energy Information Administration (USEIA). (2012b). Norway. *Analysis Briefs*. Retrieved from <http://www.eia.gov/countries/analysisbriefs/Norway/norway.pdf>
- Yergin, Daniel (2011). *The Quest: Energy, Security and the Remaking of the Modern World*. New York: Penguin.
- Yetiv, S. A., & Lu, C. (2007). China, global energy, and the middle east. *The Middle East Journal*, 61(2), 199-218. Retrieved from <http://search.proquest.com/docview/60326382?accountid=14496>
- Ziegler, C. E. (2006). The energy factor in china's foreign policy. *Journal of Chinese Political Science*, 11(1), 1-23. Retrieved from <http://search.proquest.com/docview/59704800?accountid=14496>
- Zweig, D., & Jianhai, B. (2005). China's global hunt for energy. *Foreign Affairs*, 84(5), 25-38. Retrieved from <http://search.proquest.com/docview/60158612?accountid=14496>