
Exploring the Global Financial Crisis

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Oil and the Sino-American Rivalry

Timothy Lehmann

The point that I am trying to suggest to you, Congressman, is that the gross domestic product in this country is becoming increasingly more conceptual.

The process of creative destruction has been accompanied by an ever-growing conceptualization of economic output. Ideas rather than materials or physical brawn have been by far the greatest contributors during the past half-century to our average annual increase of 3-1/4 percent in real gross domestic product.

—Alan Greenspan (2004)

The global financial crisis has clarified at least one thing: We still live in an industrial era. While in much of the United States and Western Europe, financial services have increased their share of gross domestic product and certainly trafficked in highly conceptual products, they have not supplanted the strategic significance of the material-based physical economy. Energy-intensive industrial production is the primary driver of economic and military capabilities, and the importance of natural resources in these processes and to great power diplomacy has once again been starkly revealed. The Japanese government capitulated to resource-based Chinese economic coercion in September 2010, releasing a Chinese fishing trawler's captain who had engaged a Japanese naval vessel in the disputed Senkakus/Diaoyu islands area (Bradsher 2010a; Yu et al. 2010). The Japanese did so not because the Chinese rare-earth-elements embargo against them hurt their "conceptual" value-added in the form of patented ideas on hybrid drivetrains for cars, for example. Instead, it was Japan's actual ability to produce hybrid cars and sell them to customers in need of transport that China's actions directly and physically jeopardized. In using their rare-earth-elements' leverage so boldly, the Chinese underscored a growing confidence about their current economic power despite their increasing overall vulnerability with respect to the most strategic natural resource: oil.

Petroleum is the lifeblood of economic and military power, and has been ever since the British Navy began converting its fleet to oil prior to World War I. In 1999, then CEO of Halliburton, Dick Cheney, captured oil's centrality well:

Oil is unique in that it is so strategic in nature. We are not talking about soapflakes or leisurewear here. Energy is truly fundamental to the world's economy. The Gulf War was a reflection of that reality. The degree of government involvement also makes oil a unique commodity. . . . It is the basic, fundamental building block of the world's economy. It is unlike any other commodity. (1999)

Among other reasons, oil is fundamental to this industrial and mechanized era because there is little transport and projection of economic or military influence without it (e.g., fuel for commercial container vessels carrying petroleum-based plastic product exports or for armored personnel carriers). Oil is still the largest energy source in use in the world today, although its end use has grown even more concentrated into the transportation sector. Globally, in 2007, 61 percent of oil's use went toward transportation fuels and related end uses, up from 45 percent in 1973 (International Energy Agency 2009). The motive power for all transportation crafts relies upon the marriage of fuels and machined engines, and any great power must attain competency in this core capability (Jensen 1968). Scholars across the various international relations traditions generally accept this proposition, yet the relationship is less well documented between national position in the global political economy on the one hand and oil-based fuels and the industrial production of engines and transportation machinery on the other (Keohane 1984; Strange 1987; Morgenthau 1963; Gilpin 1981; Nowell 1994). For example, the technological and industrial capacity to manufacture jet engines for commercial and military avionics applications is directly related to petroleum refining that allows the expensive transportation crafts to perform best. These goods are crucial to both wealth and military power projection, as the contest between Airbus and Boeing readily demonstrates. All of these oil-related transportation goods are substantial portions of the world economy, whether in terms of the value of domestic production or international trade.¹

By focusing on the energy and industrial rivalry that is endemic to world politics, this chapter evaluates whether China's rise is upsetting America's preponderant influence over the oil core of the world economy, a position made even more uncertain by the financial crisis. The leading position of the United States in the world since World War II has been based upon military and economic dominance of the petrochemical core of economic and military capabilities. This position was first established from the United States' own reserves of petroleum and the industrial production of the engines and vessels that led it to victory in World War II (e.g., 100-

octane gasoline and related aircraft engines). As its domestic oil advantage dissipated from the 1950s onward, US maintenance of its global position has required ever more coercive military influence over the Middle Eastern center of the world's oil supplies (Painter 1986, 1993; Yergin 1991; Goralski and Freeburg 1987; Shwadran 1974). Whether China is challenging this oil-based US order such that it will not endure is one of the most vital questions in international political economy and security. In this chapter I lay out a longer view of international order and great power rivalry, drawing relevant lessons from the US eclipse of Britain and the other great power aspirants in the oil world during WWII. I argue that by helping China develop its economy along an oil-dependent path, the United States has successfully incorporated a rising China into the US-led petroleum order. Nonetheless, US capacity to maintain its influence is not limitless and the costs to domestic autonomy are excessive and debilitating, while China is gaining greater capacity either to usurp the US role in the Middle East or to change the oil game entirely (e.g., with a fully electric transportation vehicle revolution). Given US dependency on oil and Houston's apparent dominance over US policy on alternative energies, the initiative lies with the Chinese challenger.

Oil and the Post-WWII US Predicament

The post-WWII US hegemonic system was formalized by the late 1950s, and much of it is still operative today. The economic foundation of this system was the provision of oil for industrialization and export-led development among the key states outside of the former Soviet bloc (West Germany, Japan, etc.). Allied development entailed significant exports of manufactured goods to the United States for dollar earnings that then paid for dollar-priced oil imports; as a result, allied industrial and export-led growth continued. The United States intentionally ran trade deficits with its increasingly oil-dependent allies so that they might develop more quickly and along similar petrochemical lines (e.g., oil's share in Japan's total energy use was 71 percent in 1970). This "oil triangle" with the US dollar and domestic consumer as both pillar and hub of the system worked until the 1970s (Sugihara 1993; Fukami 1989; Painter 1984; Hein 1990; Stokes 1994; Little 2008). Thereafter, US military weakness due to the Vietnam War and the consequent oil nationalizations, coupled with increased dollar surpluses among allies, helped crash the dollar-gold Bretton Woods fixed exchange rate system, setting off the dynamic of large US trade imbalances, increased inflation, and debt. In fact, most of the growth in US gross domestic product (GDP) since then has been due to unprecedented levels of indebtedness (e.g., since 1980 the overall US debt-to-GDP ratio has grown from 142 percent to well over 300 percent today).² Adding this much debt

relative to GDP since 1980 does not comport with Alan Greenspan's irrational exuberance about a 3.25 percent "real" GDP growth rate, because most of the growth is simply expenditure of borrowed monies. With the seismic shifts of the 1970s, the United States adapted by adding more players to the system (e.g., China) and allowing the interrelated processes of domestic deindustrialization and increased consumerism to marry up with vastly increased inflation and debt. These trends have permanently altered prior US dominance in lending, industrial production, and exports. What has not changed is US economic reliance on oil and its inability or unwillingness to substitute for it.³

While the United States has certainly deindustrialized in great measure since the 1970s, it is by no means true that the world as a whole has, or that those states that have continued to embrace industrial production have fared as badly as the United States. In fact, it is precisely the greater emphasis on energy-intensive industry, transportation goods, and exports that has propelled both China and Germany ahead of the United States with their recent higher economic growth rates and exports compared to the United States (e.g., Germany now has its lowest unemployment level since reunification). In 2009 the United States was only the third-largest exporter in the world behind China and Germany. China assumed the top position for the first time and has retained it through to the present while German economic performance has never been better (Bradsher 2011; Thesing 2012). Not coincidentally, neither Germany nor China has reduced the share of industry and manufacturing in their economies to the degree the United States has. Manufacturing was only 13.2 percent of US gross domestic product in 2008, down from 18.3 percent in 1990, and the 1953 peak of 28.3 percent. In China, manufacturing was 43 percent of GDP in 2008, up from 35.5 percent in 1990, while in Germany manufacturing was 24 percent of GDP in 2008, down only slightly from 28 percent in 1990.⁴ Unlike in the United States, the financial crunch of the great recession did not cause an economic slowdown or energy-use drop-off in China. Energy use continued to grow at very high rates as the Chinese car and light truck market surpassed the US market in absolute size in 2009, and major domestic infrastructure stimulus drove even more energy-intensive industrial output. For example, China's high-speed rail system and plastics production expansion have both expanded Chinese energy use. Chinese economic growth merely slowed down a bit from its torrential pace, and only for a short time. It does not matter whether one looks at polymers, pesticides, or plastics, much manufactured output is oil-based, even beyond the usual focus upon refined fuels, chemicals, and transportation equipment. Could it be only a spurious correlation among China's expanding industrial output, leading exporter status, and its vast pool of accumulated investment capital from the largest foreign exchange reserves in the world?

The global test of the proposition that energy-laden industrial prowess does not matter as much anymore is surely coming. China has already demonstrated, however, that wealth and political influence move toward those who build and deploy large-scale industrial and transportation systems.

The Challenge of China's Petrochemical-Dependent Rise

What often is lost in marveling at recent Chinese relative strength in industry and trade is the fact that much of this growth is dependent on increased oil use, imported oil comprising the majority of Chinese oil consumption. The plastics-based products that China exports and China's rapidly growing car and light truck market require oil in ever-larger amounts. Even the advanced-technology products in the telecom and computer products area, such as telephone equipment or laptop shells, require oil-based petrochemicals to produce (Morrison 2011; Gallagher 2006). While China's growth is impressive and contributes to the unease about the fate of the United States, the occasional public rhetoric of Sino-American leaders is largely hyperbole and misses the underlying driver of the relationship: oil. For example, China's export dynamism has bred some overconfidence that the yuan should become a major reserve and vehicle currency in world finance. Recently, President Hu Jintao declared that the "current international currency system is the product of the past," implying rather directly that the US dollar's role in the world economy would of necessity give way to China's yuan.⁵ This argument overlooks that 10 to 15 percent of China's recent import bills comprise dollar-priced oil imports, wherein the Chinese currency has no role save that of acquiring dollars to finance the oil deficit.⁶

A broad rivalry exists between the United States and China (Sutter 2010; Jacques 2009; Mahbubani 2008; Ross and Feng 2008; Shambaugh 2006). Its principal contours and tendencies, however, are not necessarily most visible in the currency question, the narrowly viewed bilateral trade and debt imbalances, or even in the fledgling Chinese "blue water" navy and stealth fighters. Rather, the essential fault line lies in the competition for natural resources, particularly energy resources. Since World War I, the contest for superior energy resources has determined relative economic and military power as well as the alliance dynamics that affect outcomes in great power contests (Stokes and Raphael 2010; Lai 2009; Moran and Russell 2009). Since its reengagement with the West in the 1970s, and with the assistance of the United States and Japan, China has chosen a developmental path that effectively mirrored that of the United States with petrochemical-intensive growth in agriculture, industry, and transportation

(Harrison 1977; Lee 1984; IEA 2001; Wan 2006). As a result, China's oil use has grown markedly, from 3.16 million barrels per day (mbd) in 1994 (one-fifth of US consumption) to just over 9mbd in 2010 (one-half of US consumption).

Mirroring its economic growth rate, China's oil reliance is growing rapidly, nearing the 35 percent share that oil has in worldwide energy use (e.g., compared with coal, natural gas, nuclear, and wind). Today, China's oil share in total domestic energy use is 20 percent, while the United States is still closer to 40 percent (British Petroleum 2010). China's heavy reliance on coal for personal consumption related to food and shelter as well as coal's 80 percent share of China's ceaseless electrical generation needs marginalize oil a bit statistically, but not in terms of strategic import, as China imports more than 50 percent of its oil consumption. China's oil diplomacy has sought to carve out a diverse and politically dependent set of oil providers to fulfill this domestic need. Since the mid-1990s, China has been quite skillful in picking off oil partners from the soft underbelly of the US-led system (e.g., Sudan, Congo, Libya, Angola, Yemen, and Venezuela). These partners have quantitative and public relations limitations, however, and China has had to come to the Middle Eastern core of the oil world in search of long-term ties with Saudi Arabia, Iraq, Kuwait, and Iran. As a result, China must deal with US dominance over the region and often accept a junior-partner position. For example, China National Oil Corporation has an enticingly sized minority stake of 49.33 percent to British Petroleum's 50.67 percent in Iraq's largest oil field at Rumaila ("Baghdad Awards 4.8Mn B/D Second Tranche of Upstream Oil Projects" 2009).

China has oil deals with Iran, Iraq, and Saudi Arabia, which do yield it a unique position among these top three oil reserves states. But China's capacity to act autonomously and apart from US preferences with any one of them is questionable. For example, in the most important case of Sino-Saudi relations, China has largely accepted the recent chastisement from the Saudis about Chinese-Iranian ties. The large increased amounts of Saudi oil to China are meant to compensate for decreased Chinese relations with Iran and support for US sanctions efforts isolating Iran (Sanger 2010). More narrowly, looking at increased Sino-Saudi economic ties and concluding that the United States has lost position might cause an observer to miss a key role that US actors play within this particular relationship. For example, the significant and growing Fujian refinery in China has been built to process imported Saudi crude from Aramco, which is a 25 percent owner in the project along with China's Sinopec and the Fujian provincial government. To some, this type of Sino-Saudi bilateralism might appear troubling, but Exxon-Mobil holds an equal 25 percent stake in the project with Aramco and is the lead technology provider and foreign marketer for the refinery's output. To see only decoupling and lost position is to miss the structural

position of US oil firms and their utility in potentially binding important states together under US influence.

Similar US-led efforts with Iraq's oil for Chinese energy security and subsequent Chinese compliance with at least the trappings of international community isolation of Iran only indicate Beijing's subordinated status. As a result, I contend that China is unlikely to overturn the US-dominated system any time soon. The United States could be toppled if, and only if, it loses its military preponderance over the Middle East, or the rest of the world somehow moves off of oil as the primary energy source. Barring these two eventualities, the United States is likely to remain the lead state ordering economic relations among the great powers because of its influence upon the politics of the Middle Eastern oil core of the world economy. It remains an open question whether China will challenge the US position as directly as the United States did Britain's after World War I. If China did so, would the United States respond as Britain did—with reluctant co-optation and peaceful compromise—ceding the Middle East to US leadership while accepting a permanently subordinate position?

The Importance of Oil to the Contemporary US-Led Order

The long-term risk to the US position lies with the regimes of the Middle East and their growing ties to China (Davidson 2010; Niazi 2009; Calabrese 2009; Alterman and Garver 2008). If the United States were to lose position within these states and their relations with China, then the long-standing Middle East–Asia ties might lead to a strategic decoupling from the United States.⁷ While the domestic US economic position is attenuated and the financial crisis exacerbates the trend of Near East and Far East economic integration, the geostrategic position of the US military and US transnational oil companies militates against any simple conclusion of an inevitable—let alone a quick or peaceful—hegemonic transition to China. The Iraq War (2003) and the US drive to isolate Iran belie any such likelihood for the foreseeable future. To help them pursue their own interests, the individual regimes of the Middle East region have not trusted one another or China more than they have the United States. At least until US support for the ouster of Egyptian president Hosni Mubarak, these states remained divided among themselves, much to the benefit of the United States in maintaining influence over all of them as against any extraregional interlopers. For example, it has been easier to keep China off balance in its regional aspirations and Saudi Arabia in the US camp when Iran challenges the Saudis in the region and China is forced to choose between them by a more assertive Saudi state. This beneficial strategic position may not endure,

however, if the conservative Gulf monarchies continue to view the United States as a revolutionary state, undermining their domestic legitimacy and stability through democracy promotion (Carey 2011; Bakr 2011). China presents an alternative and attractive soft power model, much as the United States did after World War I when it compared favorably to British and French imperialism in the calculations of the Saudis (Brown 1999; Oren 2007; Gracia Group 2002; Prados 2003; Kurlantzick 2007).

Like Britain before it, the United States operates a delegated dominion through private oil companies, coupled with the use of military power to police the system. In public, US officials justify US management of this system by declaring the objective to be the disinterested provision of an international public good of open access to the Middle East region's oil for the development of the world economy. Exhortation of this provision of security for oil market access is as ubiquitous among US oil elites and lay scholars as it is incomplete and disingenuous.⁸ During 1999–2000, Saudi Arabia—out of a base economic interest but also from a political desire to punish the Clinton administration's outreach to Iran, punitive Iraqi sanctions, and unilateral measures at a Palestinian-Israeli peace agreement—led the Middle Eastern OPEC states in restricting output and raising world oil prices (Bronson 2006; Alkadiri and Mohamedi 2003; Marquis 2000). Conforming to the post-World War II lexicon, in early 2001, the US oil elite congregated under the auspices of the Council on Foreign Relations and the Baker Institute and reported that “recently things have changed. These Gulf allies are finding their domestic and foreign policy interests increasingly at odds with US strategic considerations. . . . They have become less inclined to lower prices in exchange for security of markets, and evidence suggests that investment is not being made in a timely enough manner to increase production capacity in line with growing global needs” (Morse and Jaffe 2001, 13).

US concern that the Gulf states were not living up to their end of the relationship, underserving the global good of adequate oil production, coincided nicely with the George W. Bush administration's early deliberations for the Iraq War and public declarations that China was a “strategic competitor.” In February 2001 President Bush explained why US and British warplanes had recently attacked targets in and around Baghdad, well outside of the no-fly zones. President Bush said his administration was “spending a lot of time on the Persian Gulf and the Middle East,” and identified China's presence in Iraq as “troubling.” This was followed by several news accounts of Chinese assistance to Iraq's air defense network in violation of UN sanctions (Bush 2001; Calder 2003; Prados and Katzman 2002; Gershman 2001). The Bush administration's early focus on rivalry with China (e.g., the EP-3 incident) coupled with its officials' open interest in changing the trend lines in the Middle East were all indicative of their

desire to reassert US primacy (Suskind 2004). The attacks on 9/11 simply abetted this broader strategic vision, and the Iraq War was advocated from this first day of national tragedy and mobilization (Clarke 2004; Gordon and Trainer 2006). The purpose of the Iraq War was simple: reassert US dominance over the region vis-à-vis the regional oil-producing states and inveigling great powers, particularly a rising China (Cramer and Duggan 2011; Cafruny and Lehmann 2012; Gilpin 2005; Klare 2004). This did not mean, however, that China was to be cut out of future Iraqi oil dealings; China was simply to be rendered supplicant to the United States in them, as Britain had tried to do with the United States in the 1920s.

Zbigniew Brzezinski captured the enduring rationale for the United States' oil-based hegemonic position when he held,

America has major strategic and economic interests in the Middle East that are dictated by the region's vast energy supplies. Not only does America benefit economically from the relatively low costs of Middle Eastern oil, but America's security role in the region gives it indirect but politically critical leverage on the European and Asian economies that are also dependent on energy exports from the region. Hence good relations with Saudi Arabia and the United Arab Emirates—and their continued security reliance on America—is in the US national interest. (2004, 8)

Brzezinski concluded this revealing piece by noting, "Strategic domination over the area, even if cloaked by cooperative arrangements, would be a globally decisive hegemonic asset" (2004, 13). Adding Iraq back to the US-led system has indeed increased the US hegemonic asset base and yielded even more platforms to bind others into the US system. But we are still left somewhat in the dark as to how this US system operates and just how the oil firms within it hold influence positions over others, cloaking dominance in cooperative arrangements.

US oil firms are formidable actors affecting energy autonomy around the world. Their importance has not been significantly reduced despite the 1970s nationalizations and the shift away from direct control of every aspect of oil's development from the wellheads to the final point of sales (Kaufman 1978; Rodman 1988; Parra 2004). They have retained their significance in upstream exploration and production activities as well as the downstream refinery and distribution operations in customer locales. The largest exploration and production firms are headquartered in Houston, and they comprise the dominant share of global upstream activity (Tudor 2011; IHS Herold Review 2010; Berkman and Stokes 2010; "World's Ten Largest Oilfield Service Companies" 2009). Befitting its status as the largest global corporation, Exxon-Mobil alone accounts for nearly one-tenth of all oil products sales globally each year, and in the Asia-Pacific region, it is second or third in oil reserves under management, refining, and final product

sales (Energy Intelligence 2010; British Petroleum 2010; *Petroleum Intelligence Weekly* 2009). Despite the greater size of national oil companies in terms of reserves and production, US oil firms have maintained their significance within the oil world's value chain (e.g., in drilling technology and refining operations, and final point of sale facilities). Oil is approximately 15 percent of world trade by value, and just over one-third by physical volume of total seaborne exports. Oil's share of total weight in world trade is down from 56 percent in 1970, but it is still the biggest item in world trade by value and volume, as it has been nearly every year throughout the post-World War II period (United Nations Commission on Trade and Development 2009). Brzezinski's logic noted above is timeless, as the political leverage that comes with influence over distribution of this largest and most valued strategic resource has preoccupied every US administration since President Woodrow Wilson's.

Oil, Great Powers, and Building the US System

Overseeing global oil production and trade for grand strategic purposes has been a core US state function since World War I, but it no longer occurs based upon North American supplies. The Middle East is now strategically vital because the center of gravity in the oil world shifted away from the United States during World War II; the United States has transitioned from producing 71 percent of the world's oil in 1918 to only 9 percent today, while the Middle East's share has risen from 7 percent in 1945 to the 30 to 40 percent range it has held since the early 1970s. The United States peaked in oil production in 1970 because its reserves were tapped excessively from the pre-World War I era through the 1960s' height of the Cold War. The United States dissipated its oil reserves to fulfill the necessities of alliance building with the British, winning World War II and then setting the post-World War II system on a US-compatible petrochemical basis (Hikino 2007; Chapman 1991; Painter 1993). This process was exceedingly contentious, not just with the Japanese and German enemies during World War II, but also with the British, the leading oil power after World War I. Despite vast US domestic production, after World War I, Britain controlled the dominant share of foreign oil reserves outside of the United States and the Soviet Union (Fanning 1947). These were jealously guarded by Britain and only doled out to allies like the French and Dutch when strategically necessary. Other than the great powers themselves, the lead producing territories of that era were the Dutch East Indies (DEI), Mexico, Venezuela, Iran, and Iraq. The continued denial of US oil firms' expansion into the DEI, Iran, and Iraq in the early 1920s caused US officials to accept at face value the public utterances from some British officials that their strategy was to burn out US oil reserves prematurely and force the United States to come to

British terms for access to sterling-priced oil outside of the Western hemisphere (DeNovo 1956; Davenport and Cooke 1924).

Anglo-American rivalry continued well past the Anglo-American-Dutch settlement in 1928 establishing the Achnacarry cartel among their oil corporations (Hogan 1977; Randall 2007; Yergin 1991). In fact, in this accord the United States gained only the same Deutsche Bank share percentage of the Turkish Petroleum Company concession covering Iraq that Britain had used in 1914 to entice Germany into a cooperative yet fully subordinate position. The deal to jointly develop the DEI and collude against Japan's search for energy security in 1927–1928 carried far more strategic import (the DEI was the fourth-largest global producer and major source in Asia for the top three navies competing there). As a result of this arrangement, the United States came to hold Japan's vital oil lifeline with Californian oil products instead of Japan getting its oil from the much closer territory of the DEI. President Franklin D. Roosevelt declared this leverage a "noose" around Japan's neck, and used it in July 1941 to "goad" Japan into attacking south against Anglo-American-Dutch possessions at the end of 1941 (Lehmann 2009; Murray and Grimsley 1994). Prior to using this coercive oil power, President Roosevelt had to ensure that Britain did not appease the Japanese using DEI oil as it had done during the old days of the Anglo-Japanese alliance. The Mexican oil nationalization of March 1938 provided Roosevelt with a perfect opportunity to achieve this, while also improving the US image as good neighbor to the developing world. By 1938, Mexican oil was largely in British hands, with 63 percent of the oil under British firms' control. President Roosevelt and his trusted ambassador to Mexico, Joseph Daniels, fully understood that this squeeze against Britain would force Britain into the US camp in a subservient position. Therefore, Roosevelt and Daniels fully supported the rights and prerogatives of the Mexican government to nationalize their oil reserves and the foreign producer assets atop them (Jayne 2002; McBeth 1985; Gardner 1964).

The Mexican nationalization threatened British interests far more than US interests and confirmed Britain's reluctant analysis that they would have to accept a US lead in the coming strategic partnership (Leutze 1977; Reynolds 1981). Britain resented its wartime oil dependency on the United States, and toward the end of World War II, rivalry over the future of the Middle East came to the fore again. After the war, Britain exacted some measure of retribution when it obtained the Eisenhower administration's full backing for the coup against Iran's democracy after it also nationalized British oil interests in 1951. Even when President Eisenhower reined in an exuberant British desire to control the chief Middle Eastern oil transit point to Europe during the Suez crisis in 1956, he used US oil power to curb Britain's overt and rather unwelcome imperialism. President Eisenhower refused to release oil to Britain from the Western Hemisphere after the Saudi embargo in support of Egypt began, noting, "Those that began this

operation should be left to work out their own oil problems—to boil in their own oil, so to speak” (Bronson 2006, 72; Citino 2002; Kunz 1991).

Fully reversing the late 1920s’ cartel arrangements, which saw the United States as the junior partner to Britain in the Middle East, Britain capitulated rather quickly in 1956, thus sealing its fate as a subordinate partner to the United States through to the contemporary era. The problem, however, of managing all Middle Eastern oil now fell squarely upon the United States. In 1955 Senator Lyndon Johnson implored Secretary of State John Foster Dulles to ensure that Iranian oil returning to world markets not “result in further increases in already heavy imports of oil into the United States . . . that care was to be taken to see that this oil did not serve to jeopardize the position of American independents in supplying domestic requirements” (US Senate Subcommittee on Multinational Corporations 1975, Part 8, 560). The State Department assured Senator Johnson that, beyond European requirements, Middle Eastern oil’s natural market outlet was in the Eastern Hemisphere, in markets “east of the Suez” (e.g., India, Japan, Taiwan, and South Korea). The Eisenhower administration then chose to shield the US domestic market from “cheap Middle Eastern oil” by instead having this oil flow to subordinated US allies in Europe and Asia (Bohi and Russell 1978). As a result of these policies, the post-World War II Middle Eastern share of total US oil imports peaked at 34.5 percent in 1955. Thereafter, the United States depleted its own oil reserves more quickly while Middle Eastern exports went increasingly to Asia, albeit intermediated by US-based international oil companies (United Nations 1960; Harrison 1977; Hein 1990). These actions codified the oil basis of the Bretton Woods system of industrial growth and trade under US dominance. Oil coming out of the Middle East would be priced in dollars and flow to subordinated US allies in Europe and Asia, while US oil demand would be met by the inordinate production of domestic oil reserves in deference to independent oil producers and their allies in Congress and the executive branch. The United States and Britain forged a partnership from their rivalry across the decades after World War I, and despite being tightly bound allies in World War II, oil rivalry inhibited their fullest collaboration until after the Suez crisis in 1956. While the United States and China have some basis as tacit allies from the 1970s Cold War era, there is little reason to view with much confidence the likelihood of continued Chinese co-optation under US dominance.

Adding China to the US System

In 1958, former secretary of state Dean Acheson declared that China could not be considered a great power because it lacked the requisite oil resources necessary to industrialize and project power abroad. In 1959, Chinese crude

oil production started to grow dramatically, and Chinese oil power based on exports of crude became a possibility by the late 1960s (Park and Cohen 1975; Kambara 1974). China emerged as a great power at this time with its nuclear developments and border war with the Soviet Union, and it rose even higher within the US-led order by the late 1970s, opening up its economy to the outside world. The chief indicator of its openness in those days was its energy exports, particularly crude oil to Japan and the United States. Given the attention Chinese oil imports and related diplomacy receive today, it is well worth remembering that China was first a major oil exporter to the partners of the US-Japan security treaty. After normalization of relations with the United States and Japan began in 1972, China exported oil to Japan for many basic economic reasons; in part, Japan sought Chinese crude as a way to diversify away from US oil company dominance of its needs via Middle Eastern suppliers (Harrison 1977; Lee 1984). More important than each party's economic interests, however, China sought to use the oil exports to keep Japan from forging any closer ties to the Soviet Union based on Sakhalin Island or Siberian oil alternatives. These developments worked well for all parties as the United States and Japan pulled China into the anti-Soviet camp and helped it develop the modern agriculture, industry, and transportation systems that the United States had helped Japan develop after World War II (Lee 1984; Park and Cohen 1975). In exchange for the oil, Japan and the United States helped China develop these more modern practices that were, of course, also more petroleum-reliant in their operations (Wan 2006).

Apparently unaware of the importance of husbanding one's own oil reserves against the privations of would-be partners, China embarked on this oil export program in the early 1970s with gusto. During the 1970s and 1980s, China developed its oil reserves extensively and exported substantial proportions of its oil, depleting its own reserves prematurely in the process. For example, even in China's first year as a net importer of oil, 1994, the United States took 17 percent of Chinese oil exports, accelerating the exhaustion of Chinese oil reserves as the United States and Japan had been doing since the mid-1970s (China National Chemical Information Center 1997). Japan took 64 percent of Chinese oil exports in 1994 as well, and together, the United States and Japan absorbed a little over 10 percent of total Chinese oil production. During the heyday of China's oil reserves' exhaustion in the 1980s, China exported substantially more of its overall domestic production. In 1985 China exported 29 percent of its total domestic oil production (Weil 1988; Kong 2010). As importantly, the US oil firms' share of the burgeoning exploration and development market inside China proceeded apace with this oil production and trade growth. By the mid-1990s, the United States was the "largest foreign player in China's oil and gas sectors," holding 65 percent of the market for sales of technology and equipment related to exploration and development of China's oil resources

(International Energy Agency 2001; Richelson 1999a; 1999b, documents 01044 and 01730).

US oil technology exports to China went in tandem with a China-US partnership on oil-based transportation that paralleled US policy from the late 1940s forward with respect to European and Asian Cold War allies. A good example of this and its contemporary pitfall is visible in US automobile ties to China. US automobile export promotion and direct investment in co-production in China have been consistent US policy objectives since the early 1980s (Richelson 1999c, document 01756). While any strategic purpose in US policy on Chinese oil and autos has been unstated, the role of the United States in establishing these exchanges is clear. In 1983 Secretary of Commerce Malcolm Baldrige described well the driving force of the overall relationship: "US-China trade development has not happened on its own, overnight. The tremendous growth we have already seen in our bilateral trade took much planning. It required government guidance" (Richelson 1999d, document 00646). In the oil and automobile nexus, the United States only has itself to fault for China's increasing growth and displacement of the once-dominant US position. China passed the United States in 2009 as the largest car and light truck sales market in the world with 13.5 million units sold, and China is poised to consistently outpace the United States in this bellwether industrial category, which is, of course, incapable of growth without oil (Wang 2011; Kennedy 2011). The paradoxical fact that General Motors became a bankrupt ward of the US state in 2008 while its largest and most profitable market was in China comes as no surprise, given China's largely successful efforts at energy-intensive industrialization and transportation manufacturing.

The US capacity to continue to incorporate China into the postwar US system is not unlimited. China's growth has been exceptional, as its industrial and transportation sectors typify (e.g., autos and high-speed trains), while its position in the petrochemical sector has led it to a point at which "China looks set to overtake the United States as the world's most important chemicals producer from 2015" (Deutsche Bank 2008). To be sure, US businesses have facilitated this transition, as General Electric, for example, shed its plastics division to Saudi Arabia's Basic Industries Corporation in 2007, which in turn invested in several petrochemical development projects with Chinese refinery companies. Oil-based plasticized products still dominate consumer goods, and China will soon be the core producing site for these as well. It is no longer possible to dismiss China as merely an assembler of manufactured goods, "a place where the rest of the world essentially rents workers and workspace at deflated prices and distorted exchange rates" (Joffe 2009, 28; Lardy 2005). The quality of Chinese industry appears to improve at a far greater rate than in the United States, and China has moved into more advanced industrial and manufactured goods, particularly in energy for transportation systems. The fact that China has deployed an opera-

tional high-speed rail system which, like hybrid car drivetrains, relies upon Chinese world dominance in rare earth elements is testament to Chinese industriousness and leading-edge research and development (Humphries 2010; Hurst 2010; US Government Accountability Office 2010; Osno 2010; Simon and Cao 2009; Lohr 2011). In contrast, the United States has continued its decades-long process of investing small sums in pilot projects for electric cars or upgraded rail that is only potentially high speed on certain limited track segments. Furthermore, in 2009, China invested twice the amount of the United States in renewable energy technologies at \$34.5 billion, including for electric batteries in autos and light trucks, where the Chinese are leading and expected to continue to do so (World Bank and PRTM 2011). Duke Energy's Jim Rogers correctly observed, "The Chinese are important to work with because they are going to deploy faster, scale faster than we are in the United States" (Chipman 2010).

Stakeholder in or Challenger to the US System?

The speed and scale of China's ascent are challenging a United States accustomed to gradual inclusion of smaller and largely dependent great power subordinates (e.g., Britain, Japan). The key question of the twenty-first century is whether the United States will peacefully accommodate a rising China and incorporate its legitimate resource needs and desire for prestige in the international system. If US officials adequately reflect on Britain's reticence in accommodating the United States after World War I, they might avert the worst outcomes of great power rivalry by being even more accommodative of Chinese natural resource gains. Given oil's centrality to material capabilities since World War I, the diplomacy surrounding oil resources and trade naturally emerges as the most salient arena for observing tendencies in US-China relations. China abandoned its export of crude oil in the 1970s and 1980s to become the second-largest oil importer since the mid-1990s, and now it is the Asian region's largest oil products exporter because of its extensive construction of refining capacity (*Petroleum Intelligence Weekly* 2010). Despite China staying within the existing petrochemical order (e.g., little electric car development as yet), US policymakers have warily observed China's decision to satisfy its growing oil needs through deals with regimes on the periphery of the US system. US officials seem genuinely unsure of how best to co-opt a rising China while also trying to get it to stay within the boundaries of the US-led hierarchy over the Middle East.

In the most recent Bush administration, the tension in trying to achieve both of these objectives was too much, and Michael Green and Robert Zoellick, among others, asserted that China was practicing a modern form of "mercantilism," choosing oil partners that "hurt China's reputation and

lead others to question its intentions” (Zoellick 2005, 10; Abdelal and Segal 2007; Sanger 2006). Amid all of China’s diverse and growing oil partners around the world, to US officials, the most troubling Chinese ties have been with Saudi Arabia and Iran.⁹ In the aftermath of 9/11, the US Defense Department commissioned a report on growing Sino-Saudi ties amid the strained US-Saudi public relations of that moment. This report concluded ominously that “Saudi Arabia and China share common geopolitical and cultural interests, which should deepen along with economic ties. These include a desire to liberalize their economies without losing governmental control, support for a counterbalance to US dominance in global affairs, resistance to perceived US and UN ‘meddling’ in internal affairs and human rights criticisms” (Gracia Group 2002, 28). Fear of Sino-Saudi decoupling from US influence should have increased since this time as their partnership has only deepened. For example, Saudi oil exports to China grew from 229,000 barrels per day in 2002 to just over 1 million barrels per day in 2011 (*Petroleum Intelligence Weekly* 2012; *Petroleum Intelligence Weekly* 2007; Mouawad 2010). Instead, US officials now appear content to see Saudi Arabia’s ties to China as a surrogate source of leverage for the United States. This faith may be misplaced, as the strategic gains that are accruing to China are showing up in relations with Saudi Arabia that transcend the oil trade. For example, Saudi Arabia recently awarded the China Railway Construction Corporation the contract to build a high-speed rail line between Mecca and Medina (Meyer 2010; *Petroleum Intelligence Weekly* 2010). US firms can sell weapons to the Saudis but not high-speed rail systems because US firms do not yet have the natural resources, technology, and industrial capacity to develop and deploy such systems. The Chinese do, and they are using their commercial and soft-power leverage with Saudi Arabia to increase their gains with the Saudis and minimize Saudi capacity to coerce them successfully over Iran or any other issue area (e.g., Aramco as an investor in Chinese-based petrochemical refineries maintains long-term ties and possible Saudi subservience in the future).

When the United States began to pressure Sino-Saudi ties in service of an effort to isolate and sanction Iran, the Saudis demurred from publicly chastising the Chinese into complying (*International Oil Daily* 2010). Instead, with Dennis Ross’s gentle encouragements, the Saudis have sought to appease China with more oil to draw better Chinese behavior against Iran. But the leverage lies with China in complying or frustrating US and Saudi interests (as it does with China over North Korea). The Saudis have increased their efforts at commercial integration and strategic appeasement of China, but only marginal reductions in Sino-Iranian ties have resulted. In fact, China’s crude oil imports from Iran in 2011 were 557,000bpd, up from the previous all-time peak in 2009 of 465,000bpd, and still twice the amount of 2002. More importantly, the Chinese have violated the spirit of the latest UN Security Council sanctions on Iran from July 2010, as they

have shipped gasoline to Iran in many instances and are still in long-term energy development deals with Iran (Merolli 2011; Sampson 2010; Cala 2010; *Energy Intelligence Finance* 2010). The US response to this and impressive Chinese gains in other regions seems to border on peevish and only marginally self-aware weakness. For example, Secretary of State Hillary Clinton's oft-cited musing, "How do you deal toughly with your banker?" seems mild in comparison to Assistant Secretary of State for African Affairs Johnnie Carson's alleged comments. He recently observed:

The United States does not consider China a military, security or intelligence threat. China is a very aggressive and pernicious economic competitor with no morals. China is not in Africa for altruistic reasons. China is in Africa for China primarily. . . . The United States will continue to push democracy and capitalism while Chinese authoritarian capitalism is politically challenging. The Chinese are dealing with the Mugabes and Bashirs of the world, which is a contrarian political model. (Blair 2010)

Conclusion: The Financial Crisis Clarifies and Reduces the Sino-US Rivalry

There is assuredly an ongoing global contest of models at play between the United States and China. Believing that a US-led democratic-capitalist model will remain atop the world is, however, questionable at best (Deudney and Ikenberry 2009). As the United States haltingly supports deposing autocratic allies for democratic revolutions in North Africa and the Middle East, the soft-power attractiveness of China has grown in Kuwait and Saudi Arabia, among other energy-rich states. In the more material world, Chinese capabilities and energy security have increased since the financial crisis of 2008. In simple trade and finance areas, China is demonstrating the benefits of its constantly evolving export-led industrialization model and has managed to reduce its trade-partner reliance on the US market. As a result, the United States is even more limited going forward in potentially exercising trade leverage against China, as exports to the United States were only 25 percent of total Chinese exports in 2009, comprising about 6 percent of Chinese GDP. In 2003, Chinese exports to the United States were 11 percent of GDP, while in 2000, 35 percent of total Chinese exports came to the United States (*China* 2001; *China Foreign Economic Statistical Yearbook* 2001). Over the last year, Chinese holdings of US debt have decreased while China has also become the largest lender to the developing world, outpacing the World Bank itself in the last two years (Eddings 2011; Dyer 2011; Norris 2011). China's sovereign wealth and accumulated capital have allowed it to take full advantage of the financial crisis by picking up distressed energy assets all around the world. In every region of the

world, China has gained control of valuable oil assets during this Western economic downturn, finally convincing moderate analysts like Erica Downs that “there’s been a big change this year. . . . Clearly there has been a big push [to] continue investing” (Andrews-Speed 2011, 80; Nicholson 2011; Dent 2011; Cala 2010). Sinopec’s purchase of Brazilian and Gulf of Mexico assets from financially distressed Spanish energy company Repsol is a good example of intelligent opportunism. In the last two years, Chinese oil companies have acquired assets as diverse as shares in Canadian tar sands to significant rights to Angolan deep-sea exploration to the outright takeover of Addax Petroleum. The financial crisis has simply allowed those already gaining to gain even more.

Chinese acquisitions in these traditional petrochemical businesses and the continued development of domestic refining capacity in deals with the major Middle Eastern national oil companies reinforce the precrisis conclusion of Exxon-Mobil CEO Rex Tillerson. In 2008, he noted, “For the foreseeable future—and in my horizon that is to the middle of the century—the world will continue to rely dominantly on hydrocarbons to fuel its economy.” Globally, investment in alternative energies has declined due to the financial crisis, while in the United States private investment in some alternatives has been fully abandoned in a few key potential rivals to oil, like biofuels (International Energy Agency 2010; Morales 2010; Herndon 2010; Odell 2004). Much heralded in the US press and occasionally from the bully pulpit, the only remaining player in biofuels is the US Navy, whose production demands are a pittance compared with traditional US military fuels purchases. For example, the US Navy has contracted for 8,000 barrels per year of biofuels capacity by 2012, but it currently uses 29 million barrels of oil per year (*Jet Fuel Intelligence* 2010a, 2010b). US military investments may provide a lifeline to this industry. Absent a large-scale federal government commitment, however, it appears doubtful that a thriving biofuels sector will displace Houston instead of being coopted by it. Prior US efforts at alternative fuels have come and gone, and there is little reason to expect different outcomes at this moment (e.g., President Carter’s Synthetic Fuels Corporation, President George W. Bush’s “freedom fuel” hydrogen vision, and the several cycles of electric car rollouts). In fact, higher oil prices have led to greater investment in Canadian tar sands than in fourth-generation biofuels (Statistics Canada 2011). The US oil majors have not lost wealth in the downturn and are recording their highest profits in years with scheduled investments that dwarf the outlays in alternative energies (Gold 2010). Any green transition away from petrochemical dominance is unlikely to come from within the United States.

While it is true that the center of gravity for the world’s energy and economic system is shifting east, it is far too early to venture that China will lead a revolution against the US petrochemical-based system with its Middle Eastern oil core (Friedberg 2011; Beckley 2011/12). Instead, it is far

more likely that the United States and China will continue to jockey for position, with the United States seeking to co-opt China as subordinate partner in the Middle East while China looks for opportunities to peel away oil-rich lands from the US sphere, cooperating only when it must. US exhortation for responsible stakeholding by China will fall on deaf ears absent real incentives or coercion, which but for its omnipresent military the United States lacks. China must bide its time because it is militarily weaker than the United States, and it still relies on seaborne trade for 80 percent of its oil imports, just over 40 percent of its total consumption (Erickson and Collins 2010). Exxon-Mobil and the US military are only deepening their positions in Iraq and the Gulf states. They are not going to leave the Middle East anytime soon. As Gregory Gause noted, the retrenchment out of Iraq militarily was to Qatar, Kuwait, and Bahrain, not North America (Gause 2010, 249).

The United States is actively seeking to increase the role of Exxon and others inside China's petrochemical growth, and is using Iraq and Saudi Arabia to help bind China into supporting the US position. How long China will accept a junior role in a US-led Middle East is an open question, as is whether the United States will be invited to remain indefinitely astride the Persian Gulf with its military. One thing is certain: more open Chinese positions of defiance against plaintive US appeals are likely (e.g., Iranian sanctions), as are verbal rebuttals in defense of US prestige. Then secretary of defense Robert Gates foreshadowed this growing trend in early January 2011, when he stated, "I've watched this sort of cyclical view of American decline come around two or three times, perhaps most dramatically in the latter half of the 1970s. And my general line for those both at home and around the world who think the US is in decline—that history's dustbin is filled with countries that underestimated the resilience of the United States" (Gates 2011).

Despite former secretary Gates's bravado, the United States is in relative industrial decline, and absent a will to alter this, China is well positioned to challenge the United States for dominance over the energy and industrial order (Uchitelle 2011; Gertner 2011). This process would accelerate if the United States loses ground in the Middle East or the world transitions off of oil without the United States. If oil remains the dominant energy source, and there are few indications that it will be displaced any time soon, then the United States is likely to retain its primacy in the world precisely because the oil world was built by US hegemonists after World War II and has been maintained by them ever since. Trying to hold this position has required ever more use of direct military force in the Middle East, with costs both to the environment and US autonomy. The US state has not adapted to these costs in any meaningful manner. The essential, and always quickly abandoned, question is: Could the United States lead an evolution off of oil? If the United States chose to revitalize the industrial base of transportation in an innovative way, it might stem the stagnation and rela-

tive decline from excessive US debt and paper entrepreneurialism that subtracts from real growth. The United States, in fact, could prove it is the highly innovative and transformative country that its Alan Greenspan-type defenders say it is by actually developing oil-free conceptual ideas into industrial transportation products. This need has been self-evident since the early 1970s. The United States is actually less well positioned for any transformation than Japan, Germany, or China precisely because of its oil-based, path-dependent development.

In refuting Adam Smith's exhortation that the United States ought to remain a primary product and agricultural producer, Alexander Hamilton noted that "not only the wealth, but the independence and security of a Country, appear to be materially connected with the prosperity of manufactures" (Hamilton 1966, 291). The United States might challenge a rising China and a debilitated domestic frontier by manufacturing an autonomous energy and transportation infrastructure instead of warring over the world's remaining oil reserves for positional maintenance in a bygone era. This possibility seems remote, as US manufacturing continues to decline, ending 2010 at a mere 11.7 percent of the US economy. In transportation, a great deal of public excitement surrounds the return of GM to profitability, the possibility of electric cars, and the end of the oil era. Only 1.2 percent of global sales in 2010 were hybrid or fully electric vehicles, however, and GM's Volt production line stands idle at present due to insufficient demand and safety and quality concerns, while Chevron owns significant patents on electric battery alternatives to the oil-fired internal combustion engine (Harrop and Das 2011; Harrop 2011; Ramsey 2008). It is as plausible that China will use its dominance in rare earths, disregard for patents, and weaker military presence in the Middle East to build on its growing industrial and technological capabilities by developing a large-scale, fully electric transportation sector. Whatever paths the United States and China choose, the struggle over energy and industrial transportation among the oligarchic oil actors and leading industrial states will define order and rank in the twenty-first century.

Notes

1. For example, oil, autos, and other transportation machinery items are at least half of the value of world trade. See United Nations, International Merchandise Trade Statistics, Special Table F, Structure of World Exports by Commodity Classes and by Region for 2007, available at <http://comtrade.un.org/pb/SpecialTables.aspx?y=2007>.

2. See the Federal Reserve Z table US debt aggregates, which leave out the internal federal government debts (e.g., \$5 trillion in Social Security and Medicare trust fund IOUs), while also underestimating private and household debt that goes unaccounted (data available at <http://www.federalreserve.gov/releases>

/z1/Current/z1r-2.pdf). Hence, outside consultancies often come up with larger figures. Even before the large debt run-up since 2009, McKinsey Global Institute (McKinsey Consulting Group 2010) calculated the US debt-to-GDP ratio for 2008 at 290 percent.

3. In contrast, Daniel Yergin argues that the United States is “twice as energy efficient as it was in the 1970s” (2009, 94). Per capita oil use in the United States is basically unchanged since the early 1980s. Yergin runs this data point against debt-inflated GDP merely to obfuscate an essential truth (DeGolyer 2006).

4. See US Department of Commerce, Bureau of Economic Analysis, Industry Economic Accounts, available at http://www.bea.gov/industry/gpotables/gpo_action.cfm; United Nations Conference on Trade and Development 2010.

5. See Hu Jintao’s written comments in “China’s Hu Jintao Answers Questions with Washington Post” (*Washington Post* 2011). President Hu’s sentiment is in the popular zeitgeist, particularly among economists. Simon Johnson of MIT recently opined, “The age of American predominance is over. The yuan will be the world’s reserve currency within two decades” (Felsenthal 2011). For the opposite view, noting continued dollar dominance, see Eichengreen 2011.

6. See People’s Republic of China, General Administration of Customs, *China’s Customs Statistics* (various years), summaries available at <http://www.uschina.org/statistics/tradetable.html>. Oil is the largest Chinese import, and these oil shares as a percentage of total Chinese imports are up dramatically from the mid-1990s. For example, Chinese oil imports were only 4.3 percent of total imports in 1996 (Wang 1999). For the United States, oil imports are by far the largest traded item (at least 20 percent of annual imports) and comprise anywhere from 50 to 67 percent of the total annual trade deficits in recent years. US data available at <http://www.census.gov/foreign-trade/statistics/graphs/PetroleumImports.html>.

7. It is vital to recall that Middle Eastern oil was set up in the mid-1950s to flow to Western Europe and Asia, not the United States. For example, Saudi Arabia, Iran, and Iraq exported as much or more oil to Japan than to the United States in the peak era of the Middle Eastern import share into the United States, from 1955 to 1958. This was the case even before formal US import quotas in 1959, which drastically limited US oil imports from the region (United Nations 1960).

8. Many political scientists accept the public rationale for US military presence in the Middle East in terms of open access to the region’s oil and merely lament the irrational nature of this rationale because “markets” would adjust if the US military simply withdrew (Gholz and Press 2010; Preble 2009; Layne 2006).

9. For generally benign views of Chinese oil diplomacy gains, see Downs 2009; Houser 2008; and Lai 2007. Michael Klare (2004), Aaron Friedberg (2011), and Gal Luft (2009) view Sino-American oil-based conflict as more likely.