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THE RISE OF CHINA
AND ITS ENERGY IMPLICATIONS

U.S.–China Relations and Energy Cooperation

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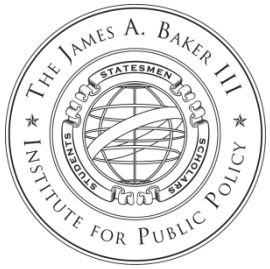

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About the Study

The Rise of China and Its Energy Implications is a major research initiative to investigate the implications of China's oil and natural gas policies and domestic energy market development on global energy markets. This study focuses on the influence of China's energy development on U.S. and Japanese energy security and global geopolitics. Utilizing geopolitical and economic modeling and scenario analysis, the study analyzes various possible outcomes for China's domestic energy production and its future import levels. The study considers how trends in China's energy use will influence U.S.-China relations and the level of involvement of the U.S. oil industry in China's domestic energy sector.

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About the Energy Forum at the James A. Baker III Institute for Public Policy

The Baker Institute Energy Forum is a multifaceted center that promotes original, forward-looking discussion and research on the energy-related challenges facing our society in the 21st century. The mission of the Energy Forum is to promote the development of informed and realistic public policy choices in the energy area by educating policymakers and the public about important trends—both regional and global—that shape the nature of global energy markets and influence the quantity and security of vital supplies needed to fuel world economic growth and prosperity.

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About The Institute of Energy Economics, Japan

The Institute of Energy Economics, Japan (IEEJ), was established in June 1966 and specializes in research activities in the area of energy from the viewpoint of Japan's national economy in a bid to contribute to sound development of Japanese energy supply and consumption industries and to the improvement of domestic welfare by objectively analyzing energy problems and providing basic data, information and the reports necessary for policy formulation. With the diversification of social needs during the three and a half decades of its operation, IEEJ has expanded its scope of research activities to include such topics as environmental problems and international cooperation closely related to energy. The Energy Data and Modeling Center (EDMC), which merged with the IEEJ in July 1999, was established in October 1984 as an IEEJ-affiliated organization to carry out such tasks as the development of energy data bases, the building of various energy models, and the econometric analyses of energy.

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I. Introduction

The U.S.-China relationship is fraught with strategic ambiguity. The two countries are neither enemies nor allies. Their relationship is marked by both cooperation and competition in the economic and diplomatic arenas. While outright military conflict is improbable, there are a number of flash points—a collapse of the regime in North Korea or an escalation of tensions between Beijing and Taiwan—that could lead to a clash of arms.[1] In the longer term, Sino-American relations are likely to be shaped by the two countries' contrasting roles in the international system.

The United States is the world's preeminent state facing almost certain, if slow, relative decline. China, in contrast, is an emerging superpower finding its way in an international order still centered around the United States. Beijing and Washington share a broad range of interests, a number of them in the energy arena. They have found areas for fruitful collaboration. But elites in both countries remain deeply suspicious of each other.

The ambiguity of the Sino-American relationship is likely to endure, given the truly historical trends underway. After all, we are talking about a dramatic redistribution of global power, akin to the shift from Paris and London to Washington and Moscow beginning in World War II. Even under the best of circumstances, the United States will be reluctant to yield its dominant position in world affairs; China will be similarly unlikely to accept junior status among great powers. The history of international systems in accommodating new great powers is a very mixed one. The rise of Germany and Japan during the last half of the 19th century and the first half of the 20th century ended in international disaster. Conflict may not be inevitable; but neither is cooperation. Given this uncertainty, both Washington and Beijing are likely to hedge their strategic bets. This will be as true in the energy sector as elsewhere.

II. Background

The current U.S.-centered world order is undergoing a "crisis of legitimacy." That order is a mix of institutional arrangements and international norms. Our argument draws, in part, upon John Ikenberry's book, *Liberal Leviathan*.[2] But the interpretation is entirely our own.

The crisis is driven by two historic phenomena. The first is the end of the Cold War. The second is the rise of emerging powers, most notably China. As Ikenberry stresses, the United States is in many ways a victim of its own success.[3] By any reasonable standard, Washington won the Cold War. Moreover, the open global trading regime fostered by the United States also contributed to the dramatic growth of economies like China's. Yet these successes have served to undermine U.S. power.

III. The Collapse of the Cold War Bargains

U.S. leadership in the post-WWII war era was based on a grand bargain between Washington and allied capitals in Western Europe and East Asia. Under the bargain, the United States would provide two international "public goods": a) a large, relatively open economy that would serve as an engine for global growth and b) a security guarantee against Soviet aggression. In return, U.S. allies would defer to Washington on a broad array of bilateral, regional, and global issues.

These bargains no longer hold.

The collapse of communism and the end of the Soviet Union have diminished the need for U.S. security guarantees. This is particularly true for Western Europe, where the likelihood of war with Russia is now remote. Today's lower threat level has been reflected in the decline in defense expenditures of major NATO allies such as France and Germany, which saw decreases of 87 and 62 percent (respectively) between the years 1990 and 2010 as measured in 2000 prices.[4] There has also been a decline in NATO cohesion. A number of major European allies, for instance, simply refused to support the U.S. invasion of Iraq. One major U.S. ally—Turkey—has shown a willingness to stake out independent stands on issues such as the Arab-Israeli

dispute and efforts to curb Iran's nuclear program. Turkey—along with another major NATO ally, Germany—chose to stand on the sidelines in 2011 when the United States, the United Kingdom, and France led a successful international effort to drive Libyan dictator Muammar Gaddafi from power.

The United States enters the second decade of the 21st century less confident than it did the first. The events of September 11 demonstrated its vulnerability to attack. Costly and protracted wars in Iraq and Afghanistan have revealed the limits of Washington's power. U.S. involvement in both countries has now lasted longer than World War II. Combined with lower level warfare in places like Pakistan and Yemen, these wars have stretched U.S. military forces very thin, indeed.

Far from being an engine of global growth, the United States' recent economic performance has been feeble. It has endured the worst recession since the early 1980s and the most severe financial crisis since the 1930s. The United States has long since become world's greatest debtor; for decades, U.S. governmental and household sectors have borrowed heavily to maintain current consumption. The country's fiscal situation is severe even as unemployment remains high. The U.S. political system—marked by divided government at the federal level and extremely high levels of partisanship—appears incapable of the difficult decisions necessary to foster robust economic growth and curtail burgeoning budget deficits. Finally, "the Washington Consensus"—the array of free market policies promoted by the United States through international organizations such as the World Bank and International Monetary Fund—has been undermined by the comprehensive failure of liberalized U.S. and Western European financial sectors.

IV. The Rise of New Powers: The Case of China

The collapse of the post-Cold War bargain has coincided with the rise of new powers, most notably China.[5] The rise of the latter is surely the most important geopolitical phenomenon of this century. China's growth rate in recent decades has been astonishing, with real GDP growth of almost 10 percent per year since reforms began in 1978.[6] It has become the world's largest exporter with estimated exports in 2010 of just over $1.5 trillion.[7] And its currency policy aimed at export-led growth has led to the accumulation of vast foreign currency reserves (mainly in

dollars) that total more than $3 trillion and have been growing at a rate of more than $150 billion per quarter in the first half of 2011.[8]

China has also modernized its military. It now ranks second among world defense expenditures. Nevertheless, its defense expenditures are only a fraction of those of the United States. China announced its defense budget in 2011 would be $91.5 billion, compared with about $550 billion in the United States.[9] Many experts believe the actual number is far higher, but even if both China and the United States spend a little over 4 percent of GDP on defense, which some say China does,[10] China's nominal GDP in 2010, at $5.8 trillion, was only 40 percent of U.S. GDP.[11]

Moreover, China has scant capacity to project power beyond its immediate vicinity.[12] The U.S. Department of Defense and many other observers believe Taiwan is the near-term focus of China's naval modernization; while capabilities have improved, China still has limitations or weaknesses in many areas including sustained operations by large forces in distant waters, experience in combat situations, and C4ISR (Command Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance) systems.[13] Only about 25 percent of its surface ships and half of its submarines are considered modern.[14] Only this August did China begin sea trials of its first aircraft carrier, but the vessel is quite old, as it was originally designed for the Soviet Navy.[15] The carrier was not completed before the USSR collapsed. While China depends on there being security in the Middle East for its own oil supplies, it prefers allowing the United States to continue to provide the means for protecting friendly Gulf states and their flow of oil while reaping the benefits of developing commercial and trade interests in the region.[16] Nonetheless, China's military buildup is significant, especially in terms of the East Asian balance of power; its defense expenditures now exceed those of Japan and South Korea combined.

China's economic emergence and military modernization have been matched by a more ambitious foreign policy. The country's accession to the World Trade Organization in 2001 marked an important moment in China's full integration into major international organizations. As we will discuss later, Beijing has played an increasingly active role in climate change negotiations. China has also expanded its bilateral relations across the board, although this includes countries that the United States considers highly suspicious, such as Sudan, Iran, and

Venezuela. Energy plays a role in China's relationship with all three countries; Beijing's ties to Khartoum, Tehran, and Caracas will be discussed later.

In short, China gives every appearance of a power on the rise; the United States is, just as surely, a power in decline. It is important to stress that the U.S. decline will be relative, not absolute. U.S. GDP will not stop growing; Americans will not become poorer; its military will not become weaker. But the economies of other countries, such as China, will grow faster than the United States; other militaries will begin to catch up with the U.S. defense establishment. And power will shift—albeit slowly—from Washington to other capitals, such as Beijing.

The precise pace of this decline will depend on many factors, relative economic growth rates chief among them. But the logic of U.S. decline is strong. Even if China's real growth averages only 5 percent per annum and U.S. growth averages 3 percent, China's GDP in purchasing power parity terms will match that of the United States shortly after 2025. By 2050, China's GDP will greatly exceed that of the United States. And this is only a comparison of the United States and China. We can assume that Indian growth, too, will continue to outpace that of the United States, for the very simply reason that, like China, India remains a poor country with far greater scope for high levels of economic growth than an advanced economy, like the United States. In other words, China and India have a lot of catching up to do. Over time, the growth rates between the United States and countries like China and India will no doubt narrow. But this does not alter the fact that the United States faces relative economic decline.

The shift in power from Washington to Beijing will take decades, not years. Even then, the United States will remain a very powerful country—perhaps, indeed, the most powerful country in the world. But it will be the first among equals. For all its spectacular growth, China remains a poor country compared to the United States, one whose GDP per capita ($4,382) in nominal terms and $7,518 in terms of purchasing power parity in 2010) was a small fraction of that in the United States ($47,284).[17] Moreover, it is unlikely to maintain its blistering rates of growth. China confronts truly daunting economic challenges in the years and decades ahead; building the infrastructure necessary to sustain its urban areas represents the largest civil engineering challenge in human history. China's military cannot yet compare to that of the United States; it

will likely be a quarter century before China begins matching the United States in its ability to project force. Beijing, for instance, has yet to deploy an aircraft carrier; Washington has no less than 11 carrier groups at its instant disposal. In its relationship with Beijing, the United States possesses that most precious of advantages: time. Washington will be able to adjust its policies—in terms of arms expenditures and seeking new alliances—in light of China's future international behavior.

Nonetheless, the United States will, over time, see its power diminish. It is simply inconceivable that the United States—with five percent or less of the world's population—will still represent 20-25 percent of world GDP in 2050 or that Washington will possess its current military edge over its strategic competitors. (Today, the United States spends almost as much on defense as the rest of the world combined.[18]) As U.S. decline occurs, other countries—allies and competitors alike—will be less likely to defer to it. China is chief among them. It is worth quoting Stephen Walt at length:

> "If China is like all previous great powers—including the United States—its definition of 'vital' interests will grow as its power increases—and it will try to use its growing muscle to protect an expanding sphere of influence. Given its dependence on raw-material imports (especially energy) and export-led growth, prudent Chinese leaders will want to make sure that no one is in a position to deny them access to the resources and markets on which their future prosperity and political stability depend.
>
> "This situation will encourage Beijing to challenge the current U.S. role in Asia. Such ambitions should not be hard for Americans to understand, given that the United States has sought to exclude outside powers from its own neighborhood ever since the Monroe Doctrine. By a similar logic, China is bound to feel uneasy if Washington maintains a network of Asian alliances and a sizable military presence in East Asia and the Indian Ocean. Over time, Beijing will try to convince other Asian states to abandon ties with America, and Washington will almost certainly resist these efforts. An intense security competition will follow."[19]

V. U.S.-China Relations

Today, relations between the United States and China reflect the complex array of subjects that both join and divide them.

Levels of trade and investment between the two countries, for instance, are simply astonishing: In 2010, the United States was China's top trade partner, with a total trade volume of more than $450 billion.[20]

Two old issues—Taiwan and human rights—continue to bedevil Sino-American relations. To date, however, the two countries have navigated disputes in ways that have avoided conflict. A possible crisis in early 2001—the forced landing of a U.S. spy plane in China—was, after a few days of harsh words, finessed with no major repercussions for bilateral relations.[21]

Moreover, China and the United States have successfully collaborated on a number of international initiatives, most notably—if still unsuccessfully—the six-party talks aimed at halting North Korea's nuclear weapons programs. In its first commitment far from home, China contributed peacekeepers to Lebanon starting in 2006, and China also has several ships patrolling against pirates off the Somali coast.[22] China and the United States both currently have military personnel in the United Nations (U.N.) Stabilization Mission in the Democratic Republic of the Congo (MONUSCO) and a military as well as a police presence in the U.N. Mission in Liberia (UNMIL).[23] Both countries are in the Association of Southeast Asian Nations (ASEAN) Regional Forum, designed to foster dialogue on political and security interests.[24] China and the United States are also in various international nuclear organizations including the Nuclear Suppliers Group and the Zangger Committee.[25] Earlier this year, China and the United States agreed to establish a facility in China to provide training on the detection of radioactive materials to address the smuggling of nuclear and radiological materials and set up a Center of Excellence on Nuclear Security in China in order to promote nuclear security and safeguards.[26]

Yet there are strains between the two countries. For instance, Washington is very suspicious of Beijing's diplomatic and economic ties to countries like Sudan, Iran, and Venezuela.

Sudan

Over the years, China has become Sudan's largest trading partner as well as international protector. Beijing has come under great scrutiny for its business interests in the northeast African nation that have provided billions of dollars in investments, oil revenue, and weapons to the Sudanese government—which has been blamed by the West for genocide in the western region of Darfur and accused by human rights groups for massacring civilians and capturing their land as part of oil development.[27] In 1996, the Chinese state oil firm China National Petroleum Corp. (CNPC) bought into its first Sudanese oil venture, purchasing a 40 percent stake in the Greater Nile Petroleum Operating Co. Production from the fields operated by the consortium currently average around 135,000 barrels a day (b/d).[28] CNPC actually has equity stakes of 40-95 percent in the country's three largest production ventures, equivalent to about 205,000 b/d of Sudan's 475,000 b/d production. Some 253,000 b/d of Sudan's oil was exported to China last year. CNPC has even built a 200,000 b/d refinery at Qinzhou to process Dar and Nile Blend crudes.[29]

In spring 2008, the New York-based nongovernmental organization Human Rights First released a report linking China's rising imports of Sudanese oil with sales of Chinese small weapons to Khartoum. Human Rights First claimed that, in return for access to Sudanese oil fields, China provided Khartoum with Chinese weaponry such as assault rifles, heavy machine guns, and mortars. China not only is Sudan's largest economic partner, but also its "military mentor, advising its army and giving it guns," said the report. Using U.N. and Sudanese government data, the report stated that China sold $3 million in small arms to Khartoum in 2003; that number had reached more than $55 million by 2006.[30] China has defended its arms sales to Sudan, with China's special envoy to Darfur Liu Guijin noting that his country's weapons sales to Khartoum only amounted to 8 percent of Sudan's arms imports and that the United States, Russia, and the United Kingdom were the largest arms exporters to developing countries, including Sudan.[31]

Since 2004, China has used its position as a permanent member of the U.N. Security Council (UNSC) to protect the Sudanese government from sanctions, initially trying to block Darfur from appearing on the council's agenda. When it failed at that, Beijing routinely abstained from voting on resolutions placing sanctions on Sudan's petroleum sector and on an imposition of an arms embargo on Sudan, which later was expanded to include all parties operating in Darfur, as well

as a travel ban and assets freeze on individuals chosen by the UNSC Sudan Sanctions Committee; China even worked to soften the language of the resolutions before opposing them. China did agree to the UNSC resolution creating a U.N. mission in Sudan and the deployment of 10,000 military personnel, though it subsequently abstained from a resolution increasing the size of that U.N. force and deployment in Darfur. Beijing had argued that Khartoum must be allowed to agree to the deployment of U.N. forces in Darfur, which it did in mid-2007.[32]

China has been prepared to support international initiatives when, however unwillingly, the government in Khartoum accedes to them. For instance, Beijing supported the referendum on independence for South Sudan and even sent election observers to monitor the polling.[33] But long supportive of the regime in Khartoum, the Chinese may now find themselves in the unfortunate position of having to renegotiate aspects of oil field contracts with the government of South Sudan, given that approximately 75 percent of the oil produced in Sudan is located in South Sudan.

Iran

China's arms relations with Iran since the 1980s have proven to be extremely worrisome for the United States. Late in the Iran-Iraq War (1980-88), evidence emerged that Beijing had been supplying Tehran with large quantities of missiles, jet fighters, and field artillery, which contradicted China's assertion that it was staying neutral in the war and not equipping either side. Most worrisome for Washington was speculation that Beijing had provided Iran with the Silkworm missile, a surface-to-surface weapon that could hit oil tankers and warships in the Persian Gulf. There were reports that China had sold Tehran as much as $2 billion worth of weaponry over a two year period, with Beijing taking Iranian oil in payment.[34] U.S. concerns about arms transfers from China to Iran have diminished since the late 1990s, as Beijing has responded to some of Washington's concerns. Nonetheless, the U.S. military continues to be concerned that Chinese anti-ship missiles could aid Iran in confronting American military operations should there be a conflict in the Straits of Hormuz.[35] China's arms sales to Tehran have continued, with the two signing arms deals reportedly valued at $400 million between 2004 and 2009, which has caused concern in Washington.[36]

Beijing has developed strong energy ties with Tehran over the past decade in particular as the Asian giant's oil demand has soared, as roughly 9 percent of China's overall oil imports were from Iran in 2010[37] and 11 percent in 2009.[38] China is the second-largest buyer of Iranian crude behind Japan.[39] Through its state oil firms, Beijing has made considerable investments in Iran's upstream sector in recent years. Since 2004, China National Petroleum Corp. (CNPC) and China Petroleum and Chemical Corp. (Sinopec) have both inked lucrative multibillion-dollar deals to develop the onshore Yadavaran and Azadegan fields, while CNPC sealed a $4.7 billion contract in 2009 to develop Phase II of the giant South Pars gas project.[40] Investments committed by the Chinese NOCs in Iran's energy sector between 2004 and 2009 total around $120 billion.[41]

Given its extensive energy ties with Tehran, it is no surprise that in the UNSC, Beijing has been consistent in attempting to water down sanctions against Tehran. One of China's concerns in siding with other UNSC members on enacting sanctions on Iran to stop its uranium enrichment program was that Beijing's oil supplies would be cut off in retaliation. In November 2010, leaked diplomatic cables on the Wikileaks website suggested that Saudi Arabia made a commitment to China that in exchange for Beijing's efforts to stem Iran's nuclear ambitions, the kingdom would guarantee that any loss of Iranian barrels dedicated to China would be offset by Riyadh.[42] Under strong diplomatic arm-twisting by the United States and assurances by Saudi Arabia and also the United Arab Emirates that China would not suffer if Iran pulled back on oil volumes, Beijing joined Russia and other permanent and non-permanent UNSC members to pass the fourth council resolution imposing sanctions on Iran in June 2010. In securing China's support, however, Washington had to accept Beijing's insistence that the resolution put no direct restrictions on investing in Iran's energy sector, thereby ensuring that Chinese oil companies could continue working in Iran, and China could continue to import Iranian oil.[43] It appears that Washington offered another incentive to China for supporting the latest sanctions—more opportunity in the U.S. energy sector. Reports suggest that the Chinese government told its NOCs working in Iran to slow down their operations after the United States imposed additional unilateral sanctions on Tehran in June 2010 and as CNPC and China National Offshore Oil Co. (CNOOC) were progressing on two key deals. In September 2010, CNPC announced that it had teamed with U.S. major Chevron to explore for gas in Australia and a month later, CNOOC reported that it had entered into a $1.1 billion shale gas deal with U.S. independent Chesapeake Energy.[44]

There are limits to China's support for Tehran. Beijing has accepted the two-track international approach to Tehran that includes both negotiations and pressure. China is a member of the so-called "P-5 + 1" group—the five permanent members of the UNSC, plus Germany—that has attempted to negotiate a nuclear deal with Tehran. And China has criticized Iran for failing to be fully forthcoming with the International Atomic Energy Agency. But Beijing remains adamantly opposed to a military solution to the impasse between Iran and the world community.[45]

Venezuela

The growing diplomatic, trade, military, and oil ties between Beijing and Caracas since Hugo Chavez took leadership of Venezuela more than a decade ago is of deep concern to Washington. Chavez's anti-American stance and drive to move his nation to embrace a socialist agenda has seen Venezuela find a natural and strong ally in China. And Beijing's hunger for oil to meet its burgeoning domestic demand and desire to diversify its supplies away from the Persian Gulf has meshed with Chavez's desire to tweak Washington and reduce Venezuela's dependence upon crude sales to U.S. refineries by shifting barrels eastward. Despite a change in supply strategy, Venezuela still exports substantially to the United States—with the world's largest consumer purchasing some 938,000 b/d of crude and products from Venezuela in 2010. China's crude imports from Venezuela—while still small compared to the U.S. volume—grew four-fold from 35,000 b/d in 2005 to nearly 126,000 b/d in 2010.[46] However, Venezuelan barrels to China have in individual months over the past several years been substantially higher, with Caracas supplying the Asian giant with as much as 315,000 b/d in January 2011.[47] And, there may be another good reason for China taking in higher volumes of Venezuelan oil. In April 2010, Chavez announced that Beijing had agreed to provide his country with $20 billion in loans—with repayment in oil supplies; the loan followed on a previous agreement calling for a $12 billion bilateral investment fund.[48] The Chinese government itself reported in April 2010 that it had signed seven cooperation accords with Venezuela, notably "a framework agreement" on financing under which the China Development Bank (CDB) would provide Venezuela a $10 billion loan and additional credit worth roughly 70 billion yuan ($10.4 billion). According to the Venezuelan law passed to approve the financing, Venezuela is to repay China with "no less than 200,000 b/d of crude in 2010, no less than 250,000 b/d in 2011, and no less than 300,000 b/d in 2012.[49] In December 2010, it was reported that China's three main NOCs had signed six

agreements to explore for oil and gas in Venezuela, increasing their investments collectively in upstream work in the Latin American country to as much as $40 billion.[50]

Of more concern to Washington than the increasing energy ties between Caracas and Beijing is Venezuela's 2008 order of 18 Chinese-built K-8 light attack and training jets. In March 2010, Chavez officially received the first six jets and announced three months later that Venezuela would be spending $82 million on the second tranche of planes. The United States imposed an embargo on the sale of U.S. weapons parts to Venezuela in 2006 and has accused Chavez of intentionally starting an arms race in Latin America. A previous Venezuelan effort to buy similar jets from Brazil's Embraer had faltered because those aircraft used American electrical systems. Venezuelan officials have stated that the K-8 aircraft would be used to train pilots and to intercept drug traffickers who use the country as a stop-off point while smuggling cocaine to the United States, Europe, and Africa. Chavez has said that he wants a fleet of 40 K-8 jets.[51]

Trade

China's huge trade surplus with the United States continues to prompt calls for remedial action in the United States. Some of this no doubt reflects simple protectionist sentiment. But there is an element of truth—and a critical one—to complaints about the huge imbalances between the two countries. In 2010, while the United States exported $92 billion worth of goods to China, the U.S. imported about four times as much ($365 billion), leading to a bilateral trade deficit of $273 billion.[52] The current situation, under which, very crudely, China lends the United States money to buy Chinese imports, is unsustainable in the long-term.

The solution to this imbalance is not a mystery. The United States needs to increase its domestic savings rate by reducing its budget deficits and curtailing household debt; China needs to increase its domestic consumption—and, incidentally, dampen inflationary pressures—by letting its exchange rate appreciate. Neither country has anything to gain by prompting a crisis over the trade imbalance. The United States needs China to help finance its fiscal deficit; China needs the United States as an export market. China and the United States are locked in a relationship some have described as "mutually assured financial destruction."[53] But coordinating a medium- to

long-term policy to reduce imbalances between Beijing and Washington will require not just deft diplomacy but also careful handling of powerful domestic constituencies in both countries.

VI. U.S.-China Relations: The Case of Energy

The energy sector reflects the broader ambiguity of U.S.-China relations.

On the one hand, the two countries are competitors for world energy supplies. In 2010, the United States and China were the world's largest consumers of oil, using 19.1 million b/d and 9.2 million b/d respectively.[54] The United States fields a vast naval and air apparatus to ensure that it can depend upon the flow of oil to world markets. These same forces, of course, are capable of interdicting energy supplies to China in a crisis. Today and for the foreseeable future, China is simply incapable of challenging the United States on the high seas. Beijing, for its part, is clearly aware of the vulnerability created by increasing energy imports. This is reflected both in its efforts to secure partnerships with energy producers such as Sudan and Iran and in its drive to diversify supply by building pipelines from Central Asia. Chinese firms have had some of their first international forays into Sudan[55] and have signed multibillion-dollar deals to develop Iranian oil and gas fields and refineries in the past few years.[56]

On the other hand, the United States and China are both major importers of petroleum (9.5 and 4.9 million b/d in 2010, respectively) and both presumably have an interest in stability in major oil producing regions.[57] The problem, of course, is that Washington and Beijing have different ideas of what constitutes stability. The United States, for instance, clearly sees Iran as the main source of instability in the Persian Gulf. Saudi Arabia and other Gulf Cooperation Council (GCC) members like Kuwait and Bahrain perceive Iran as a destabilizing agent, not only for the power it would wield in the Gulf and the threat it would pose if it had nuclear weapons capability, but also because of the worry that Shi'ite Iran's influence, which has grown in post-Saddam Iraq, will spread further into the region. In April 2011, the GCC publicly stated that the group is "deeply worried about continuing Iranian meddling."[58] Kuwait announced in March 2011 that it was expelling three Iranian diplomats involved in a spy ring uncovered last year that the emirate claimed had direct links to Iran's Revolutionary Guards.[59] Unnerved by the growing

unrest next door, the Saudis led a military force into Bahrain in March to help the beleaguered regime stave off an uprising among the country's majority Shi'ite community. The action was meant to not only safeguard the leadership of the ruling al-Khalifa clan but also to send Iran a warning. Tehran has called the Saudi-led mission into Bahrain an "occupation."[60]

Beijing's support for Tehran may not be driven by any particular sense of affinity for the Islamic Republic. The secular leaders of China have little in common with the theocrats of Iran. On balance, Beijing would surely prefer it if Tehran did not develop nuclear weapons. But China values its commercial ties to Iran. And it is simply less worried about Iran than the United States. It is, after all, U.S. client states like Israel and Saudi Arabia which feel most threatened by Iran. And a nuclear Iran would constrain U.S., not Chinese, strategic options in the Gulf, most notably Washington's ability to effect regime change in Iran by military force. China has long contended that diplomacy is the solution to convincing Tehran to walk away from its nuclear ambitions rather than placing unilateral or multilateral sanctions on the country and feeding into the agenda of Iran's hardliners. Indeed, Beijing is convinced that Washington is not so much motivated by nonproliferation concerns as it is intent on Iranian regime change.[61] The U.S. invasion of Iraq—justified in part by what turned out to be false claims about that country's nuclear program—supports Tehran's suspicions.

Once again, it is important not to overdraw the case for Chinese support of "rogue regimes." Under U.S. pressure, China has, in fact, dramatically slowed in new investment in Iran's energy sector.[62] But Beijing is also finding itself in a spot of trouble with the Iranians on existing projects, with Tehran in mid-October 2011 suspending CNPC's $16 billion contract for developing the North Pars gas field. CNPC had been warned by the National Iranian Oil Co. (NIOC) this summer that the Chinese firm's contract for phase 11 of south Pars would be cancelled if CNPC failed to begin project development in the first half of 2011. The Iranians did not appear to accept CNPC's claim that lack of financial resources had delayed phase 11 development, and NIOC subsequently suspended CNPC's North Pars deal in hopes of pushing the Chinese state oil concern to pick up the pace at South Pars.[63] Given the importance of the South Pars development to Iran, Tehran is not pleased with China's slowdown on work—which

it perceives as influenced by Washington—but Iran can also not afford to put Chinese investments in its energy sector in jeopardy.

Global climate change is another area of potential cooperation between the two countries. The Copenhagen Summit revealed unprecedented Chinese involvement in climate change negotiations. At Copenhagen, China was a—and, arguably, *the*—major player in two of the most significant areas of disagreement at the summit: financing for developing countries and independent verification of emission reductions, known as measurement, reporting, and verification (MRV).[64] And if it were not for a last minute meeting between President Barack Obama and the heads of state of China, India, and Brazil, the entire conference may have ended without any agreement.[65] That said, the final agreement was only "noted" rather than "adopted" because a small group of countries including Venezuela, Bolivia, Cuba, and Sudan blocked unanimous adoption.[66] China was also a key player at last year's Cancun summit, again sparring over issues related to MRV,[67] although China ultimately accepted the final agreement.[68]

Yet China—like India—remains adamantly opposed to the absolute quantitative limits necessary to achieve a substantial reduction in greenhouse gas emissions. Rather, China calls for reductions in the "emission intensity" of its economy—the amount of emissions per unit of GDP. In the most recent 12th Five-Year Plan (FYP), which is for the period 2011-2015, Chinese leaders call for a 16 percent reduction in energy intensity and a 17 percent reduction in carbon dioxide (CO_2) intensity by the end of 2015.[69] These targets are likely to be met or nearly met, sometimes by dramatic means; in order to reach a 20 percent energy intensity target in the 11th Five-Year Plan, which China missed by less than 1 percent, Chinese officials ordered over 2,000 steel mills, cement works, and other factories to shut down in summer 2010.[70] Looking forward, some have speculated that China may implement a cap-and-trade program in the next five years, expanding on the voluntary markets in some major cities.[71] Still, with the Chinese in the 12th FYP expecting growth of 40 percent through 2015—assuming a growth rate of only 7 percent, lower than what it has averaged the past three decades—emissions are still expected to rise.[72]

Moreover, the United States has hardly led by example when it comes to addressing global climate change. A major carbon tax is off the U.S. political table; so, since the Republican gains

in the 2010 congressional elections, is a cap-and-trade regime. The Obama administration will be hard-pressed even to protect the Environmental Protection Agency (EPA) from efforts to strip it of its power to regulate greenhouse gas emissions. In early April 2011, the Senate defeated four of these attempts to limit the power of the EPA.[73] However, it is hard to know what will be in play in the future in order to further raise the debt limit or pass budgets, both of which have already led to crises on Capitol Hill.

Yet another area of potential cooperation—and one recently much in the news—is possible Sino-U.S. collaboration on "green technologies." When President Obama traveled to China in late 2009, he signed an agreement with China that began seven cooperative energy initiatives on scientific research, electric vehicles, energy efficiency, renewable energy, shale gas, research and investment by private companies, and coal with carbon capture and storage (CCS).[74] The project on coal, "21st Century Coal," appears to be an area particularly ripe for cooperation: Both countries are major coal producers and consumers. In 2009, China consumed 3.47 million short tons of coal, while the United States consumed roughly 1 million short tons. Nearly all coal consumed in both China and the United States is domestically produced in each country. Together, the countries represent almost 60 percent of global coal consumption.[75] Yet there is rising concern in Washington that U.S. efforts to deploy more environmentally sound technologies domestically will simply create jobs in China, not the United States. In one very notable example, Sen. Chuck Schumer (D-NY) urged President Obama in late 2009 to block $450 million in stimulus funds for a wind farm in Texas that was scheduled to be constructed with Chinese-manufactured turbines.[76]

VII. Conclusion

U.S.-China cooperation on energy may be important. But it is very much a subset of broader Sino-American relations. And these are, as we have argued, profoundly ambiguous.

Going forward, we can expect to see both countries hedging their bets. The United States may well seek partnership with China on an increasing array of international issues. But it is also going to maintain current allies, like Japan, and cultivate possible future ones, like India,

necessary to offset China's growing strength. China, for its part, may well cooperate with the United States on energy issues but will remain very uneasy about its increasing vulnerability to U.S. naval interdiction. It will likely continue efforts to build its own partnerships with oil-producing countries, seek supplies less open to U.S. blockade, and continue to expand its navy.

In the United States, there is a sizeable range of opinion on China's future trajectory, both domestic and foreign. Many conservatives already consider China a *de facto* enemy of the United States. Prior to September 11, there was already much talk of a coming conflict between the United States and China.[77] For many conservatives, the immediate threat of radical Islam displaced the longer-term threat presumably posed by China. This may be changing. Enemies are useful things—for Chinese and Americans.

Even as China becomes, in the words of World Bank President Bob Zoellick, a "responsible stakeholder" in the international arena, the United States must brace itself for global power-sharing—what Ikenberry would call a new "grand bargain" that would include China, India, and others. Given the long-term nature of the global power shift underway, the process will be a slow one. But it will not be easy for any of the parties—not least the United States, where the idea of American "exceptionalism" is deeply entrenched. Chinese, too, are possessed of a profound sense of national destiny. How to reconcile these two visions will almost certainly be the greatest geopolitical challenge confronting the world in the 21st century.

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