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China's Hunger: The Consequences of a Rising Demand for Food and Energy

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The People's Republic of China (PRC) has begun to assert itself in international affairs, and in ways that the established powers find not to their liking. China has fired missiles over the Taiwan Strait, opposed humanitarian intervention in Kosovo, seized islands in the South China Sea, and promiscuously exported ballistic missile technology to states inclined to challenge the international status quo. Chinese words have been even more inflammatory than Chinese deeds. Within China certain authors, with the apparent approval of the Beijing regime, have suggested that China should engage the West in so-called "dirty wars." These would involve using nuclear, chemical, and biological strikes, or engaging in economic warfare to undermine the Western economies.[1] Chinese military officers have discussed the advantages their country might accrue by conquering territory as far from its current borders as the Marshall Islands.[2]

Scholars, pundits, and strategists responding to these events have begun to discuss possible reactions to China's debut. A common theme in their discussions is the idea that by selecting the right mix of toughness and blandishments, Western countries might persuade China to moderate its conduct.[3] One should not, however, be sanguine about the prospects for such international behavior modification. Moreover, one should not assume that China's ambitions are limited to Asia. The factors that place the PRC at odds with the established world community are global, material, and integral to China's existence as an independent polity. Chief among these factors is China's reliance on imported food and energy.

This article explores the possible consequences of China's requirements as follows. First, it addresses why China's economic aspirations virtually ensure that the PRC will need to find new sources of food and energy. Next it explores ways in which the PRC might attempt to satisfy its needs, and the political problems China's methods may raise. Then it discusses what may happen if the PRC fails to obtain the food and energy it requires, and finally it sums up the more general consequences of China's resource demands.[4]

Fueling Development: China's Demand for Food and Energy

China is famous for its potential to be an important global actor. Under the communist government, China has begun to realize that potential. Despite fiascoes such as the Great Leap Forward and the Great Proletarian Cultural Revolution, Mao Zedong left his country with nuclear weapons, strategically valuable new territory, and a space program.[5] His successors, seeking to consolidate those gains, have concentrated on fostering the PRC's industrial and commercial capabilities. Although some regions and enterprises have made more gains than others, China's Gross Domestic Product has grown at nearly ten percent annually in recent decades, and many of its industries, notably electronics, telecommunications, and automobile production, have expanded spectacularly.[6]

Economic growth is important to the PRC regime, not only for its own sake, but also as a foundation for future military power.[7] The PRC's program for building modern armed forces depends upon building a modern economy to pay for them. Deng Xiaoping explained this concept in his so-called Sixteen Character Slogan, which runs, "Combine the military and the civil, combine peace and war, give priority to military products, let the civil support the military." [8] Contemporary Chinese leaders frequently cite this slogan as their guiding principle.[9]

PRC leaders consider a strong military to be vital to their country's future independence. Chinese writers openly depict

India, Japan, and America as possible enemies.[10] China's leaders must also have considered the possibility that their current entente with Russia may not last forever, although they may find it impolitic to say so. For these reasons and others, the Chinese cannot afford to let their economy falter. Yet this economic growth, upon which so much depends, is fragile because of two structural problems: the need for imported food and the increasing reliance on imported energy.

As China's economy grows, its need for petroleum grows in direct proportion. Recently the problem has become acute. China became an oil importer in 1993, and its annual demand is rising approximately seven percent faster than its production.[11] Worse, approximately 80 percent of China's oil production comes from aging wells, many of which may soon run dry.[12] The demand for foreign oil makes China dependent not only on petroleum, but on the hard currency needed to buy it.

Meanwhile, despite China's attempts to limit its population, its food requirements are also becoming increasingly burdensome. The Organization for Economic Cooperation and Development (OECD) predicts that China's demand for imported grain will rise from three million metric tons at the start of the 1990s to 43 million by 2010, but more pessimistic observers say that the figure could rise to 216 million tons early in the 21st century.[13] China's nutritional problems are compounded by the fact that water, like arable land, is scarce in China.[14] Chinese agriculture is unusually dependent upon irrigation. China's industrial and domestic demand for water is increasing as well, meaning that the water shortage has consequences in many areas of Chinese life.

China's Quest for Oil

In the early 21st century, China's shortage of petroleum is a more immediate problem than its potential shortage of food. An obvious way for China to get oil is to buy it on the world market. However, as Kent Calder has pointed out, China's increased oil demand comes at a time when petroleum requirements throughout Asia are increasing. Petroleum accounts for 51 percent of total regional energy consumption in the Western Pacific, compared to 40 percent worldwide. One of the major reasons for this imbalance is that Asian countries produce large quantities of steel, petrochemicals, automobiles, and other manufactured goods. This kind of industry requires large quantities of energy.

Not only are Asia's petroleum demands already high, but they rise with each upswing in the Asian economy. While overall world oil demand was essentially flat in 1993, demand in the Western Pacific rose four percent. Outside Japan, oil demand in 1993 rose 6.8 percent. Growth reached 11.4 percent in South Korea, as well as eight to nine percent in both China and Thailand.[15]

High demand means high prices, and this exacerbates China's difficulties. To buy oil, China must make money, and to buy oil from abroad, China must acquire globally recognized currencies. This makes China increasingly dependent on its export trade. If oil prices go up further, Beijing would find all these facts yet more troublesome.[16] The price of petroleum could easily become a drag on China's economic growth.

Chinese leaders must also reckon with the fact that their country imports most of its oil from the Middle East. This makes China vulnerable to price fluctuations and outright shortages caused by political turmoil in that region. Historically, the United States and its European allies have acted as a final arbiter in Middle Eastern crises. The 1991 Gulf War serves as a dramatic reminder of this fact, and it is worth noting that China abstained from voting on UN Security Council Resolution 678, which authorized the US-led coalition to use force against Iraq.[17] However, China's leaders cannot wish to rely on their potential rivals in the West to guard and regulate their oil supply.

Dependence on Arab oil confronts Beijing with a similar problem on the high seas. Middle Eastern petroleum comes to China by ship, on a route that leads across the Indian Ocean and through the Indonesian archipelago. Pirates already plague these routes. Furthermore, China's potential rival India sits astride this line of communications, and India possesses a considerable fleet. China must trust Western navies to maintain the freedom of the seas, but it can hardly be sanguine about this fact.

Lieutenant General Li Jijun, former Vice President of the People's Liberation Army (PLA) Academy of Military Science, speaks passionately about China's determination never to be subordinate to Europe and America again.

Before 1949, when the People's Republic of China was established, more than 1,000 treaties and agreements, most of which were unequal in their terms, were forced on China by the Western powers. According to Chinese estimates, China may have lost as many as 1.8 million square kilometers to other states. This was a period of humiliation the Chinese people can never forget. That is why the people of China show such strong emotions in matters concerning our national independence, unity, and integrity of territory and sovereignty. This is also why the Chinese are so determined to safeguard them under any circumstances and at all costs.[18]

Accordingly, the PRC has been expanding its fleet. The PLA navy is not only China's sole tool for protecting its shipping, but it will be necessary if China ever wishes to develop the ability to intervene directly in Middle Eastern affairs. China has already deployed troops to protect its oil investments in Sudan.[19] Meanwhile, the PRC has cultivated ties in the Middle East, notably with Iran and Israel.[20] China's demand for oil is forcing Western countries to meet the PRC as a diplomatic and military player in areas that are critical to Europe and America.

The more China relies on Middle Eastern oil, the more it must participate in global trading regimes. China's leaders are certainly willing to take advantage of international commerce. "To open to the world is a fundamental policy for China," former Chinese Premier Deng Xiaoping noted.[21] Nevertheless, Deng was equally emphatic about the importance of maintaining China's independent political and economic system.

One should never underestimate the antipathy with which China's leaders view the global economic and political status quo. That the Chinese regime is willing to participate in this system for its own purposes does not mean that it accepts it, or that it is willing to conform to liberal international conventions. "The entire imperialist Western world plans to make all socialist countries discard the socialist road and then bring them under the control of international monopoly capital," Deng stated.[22] Jiang Zemin, China's current President, has stated a similar position in equally ringing terms:

International hostile forces will never stop using peaceful evolution against us for a single day. Bourgeois liberalization is an internal matching force, which they use to carry out peaceful evolution. These kinds of hostile activities constitute a real threat to China's independence, sovereignty, development, and reform. In other words, peaceful evolution and bourgeois liberalization are aimed not only at overthrowing our socialist system but, fundamentally, at depriving us of our national independence and state sovereignty.[23]

Since Beijing finds trading with "international hostile forces" so corrosive, it has strong incentives to seek new sources of petroleum. Three possibilities suggest themselves. First, the Chinese might tap new oil reserves within their own country. Evidence indicates that there are petroleum deposits within the Tarim Basin of Xinjiang Province. Second, China might build a pipeline to the oil fields of Central Asia. Third, China might attempt to tap offshore oil in the South China Sea.

The first possibility has obvious advantages. Xinjiang Province is part of China's national territory. If the Chinese could acquire their oil there, they would not need to worry about shipping lanes or international crises. To acquire oil from Xinjiang Province, however, Beijing would have to overcome both technical and political difficulties. The Tarim Basin deposits are located at unusually great depths beneath the earth's surface. This makes it difficult and expensive to tap them. To complicate matters, these deposits are located in some of the most inhospitable deserts in the world.

Xinjiang Province is also troubled by a separatist movement.[24] Oil rigs and pipelines present an ideal target for saboteurs. To suppress such activity, China might well have to resort to brutal measures. This would be an embarrassment, if nothing more, to governments that have tacitly committed themselves to upholding global standards of human rights. The Chinese, for their part, are not so economically potent that they can ignore the risk of incurring international trade sanctions. Beijing is already locked in a struggle against the principle of humanitarian intervention in world politics, and if China were to commit itself to developing the Xinjiang oil reserves, the stakes in this struggle would rise.[25]

The shortest pipeline route between China and Central Asia crosses Xinjiang Province. If China chooses to import its oil from the former Soviet republics, it will encounter the same political and climatic problems it would face if it chose to exploit the Tarim Basin. Moreover, such a pipeline would have to cross at least one other country, and possibly

several.[26] This would embroil China in the revived "great game" of Central Asian oil politics.

Despite these difficulties, the Chinese have drawn up plans for a pipeline to Central Asia. This project has the potential to reduce Beijing's dependence on the Middle East. The pipeline, however, may take 15 to 20 years to complete. By that time, China's oil demands are likely to have grown to the point where a single pipeline can no longer satisfy them.[27]

Of all of the places in which China might look for oil, the South China Sea is the one where it faces the greatest likelihood of war. China claims the main island chains in these waters as its own, and controlling them would give China control over the adjacent seabed. Nevertheless, Vietnam, Malaysia, Indonesia, and the Philippines all have conflicting claims. China has repeatedly seized contested islands by force, and Indonesian military commanders have hinted their willingness to fight for these waters as well.[28]

The PRC has coerced the Southeast Asian nations into accepting their claim to an exclusive economic zone throughout the South China Sea, and may be able to acquire oil rights to this region through a similar process of intimidation. Even if China could secure control over the area, however, it would have to overcome considerable technical problems before it could begin extracting oil. To begin with, experts are not certain how much petroleum is there to be extracted.[29] Any oil that is there is likely to be deep beneath the seabed, complicating drilling. Also, operations to exploit petroleum beneath the South China Sea could take as long as 20 years.

Although all of China's potential sources of energy present problems, none of these problems is insolvable. China may wish to avoid dependence on Middle Eastern oil, but there is presently nothing to stop it from importing as much as it can afford. If Beijing alters its industrial plans and adopts alternative sources of energy, it will be able to moderate its oil consumption in both the long term and the short. However, food supplies present a problem of a different kind. China may get by with less energy, but it cannot get by with less food.

China's Quest for Food

China's time-honored method for increasing its food supply has been to increase the number and efficiency of its farms. In the 21st century, however, China is likely to encounter limits to the amount of food it can grow. Arable land is more widespread than oil fields, but, as the saying goes, they are not making any more of it. Furthermore, the Chinese, like all peoples, have historically built their cities in fertile regions with flat terrain and relatively comfortable climatic conditions. As these cities expand, agriculture comes into conflict with urban life and industrial development.[30]

Further complicating these problems, the Chinese diet is beginning to change. China's people are eating more protein, particularly in the form of meat. This places yet another burden on China's agricultural system. Raising food animals and the grain to feed them requires more land and effort than growing crops for direct human consumption.[31] Nevertheless, people like meat, and if Beijing wishes to avoid intrusive and possibly unpopular measures to control its citizens' diet, it must accept this as one of the costs of modernization.[32]

These facts present China's economic planners with a dilemma. Although China cannot do without food, it also cannot expand its economy without devoting more land to its industrial base.[33] Furthermore, if China's leaders remain committed to the idea that commercial competition improves economic productivity, they will have to relinquish at least part of their control over land use to private interests.[34] China may be able to improve the productivity of existing farms. Vaclav Smil, for instance, notes that the PRC has consistently under-reported the amount of arable land, used inferior agricultural techniques, and mismanaged its agricultural resources.[35] In the short term, Smil believes that China can remedy these problems with relatively little difficulty. There is, however, a limit to the amount of food even the most effectively cultivated acre of soil can produce. Smil's research indicates that the Chinese may reach that point within as little as 20 years.[36] Eventually, China's economic planners will have to make trade-offs between urban and agricultural needs. The less food they choose to import, the more difficult these trade-offs will become.[37]

China's food requirements give Beijing yet another reason to be emphatic about asserting its claims to the South China Sea. Although this body of water's value as a source of oil remains in question, there is no doubt about its value as a

source of fish. The Chinese people's growing appetite for meat makes seafood doubly valuable. Currently all the countries of the region fish in these waters, but as stocks diminish, Beijing may be less willing to share.

The idea that China might go to war over fisheries would seem less plausible if it were not for the fact that senior Chinese officials occasionally allude to it. Liu Huaqing, China's highest-ranking military officer, writes that "the strategic importance of the oceans has increased day by day," mainly because "exploitation of the ocean has turned into an important condition for coastal countries in developing their economy and overall strength of national power." [38] Moreover, one must remember that in the North Atlantic, British and European fishing fleets engaged in confrontations which, if the context had not been among European allies, might have led to a more serious conflict. In the South China Sea the dispute-resolution systems are not as far advanced as those in the North Atlantic.

Writing in 1998, three Chinese naval officers asserted that ocean resources make command of the sea more vital in the 21st century than ever before. [39] In 1994, Lieutenant Colonel Cui Yu Chen of the Chengdu military "research office" published a book called *New Scramble for Soft Frontiers*, which notes that as China's need for agricultural land and oil increases, China must reclaim "sovereignty and sovereign interest in the oceans." [40] Fish are only one of the resources that these authors hope to exploit. As Cui Yu Chen observed, China needs ocean territory to supplement its agricultural land, indicating that the Chinese are clearly aware of the importance of the fisheries.

Whatever agricultural policy China adopts, and whatever measures it takes to secure fish from the South China Sea, it will almost certainly have to increase food imports. Importing food will confront Beijing with many of the same domestic and foreign policy problems as importing oil. The fact that even the poorest nations must treat food as an indispensable commodity raises further international issues. If a country with China's population dramatically increases its reliance on imported food, the price of grain on the world markets is likely to rise. [41] This may have grim consequences for areas that already have difficulty meeting their food requirements, such as sub-Saharan Africa. [42]

Food scarcity heightens tensions between the rich and the poor, both within nations and among them. This raises political issues that those who profess to follow Marxist ideology can hardly overlook. Although Beijing can scarcely welcome such developments, Chinese intellectuals have suggested that it might nevertheless take advantage of them.

As an illustration of how some Chinese thinkers view these issues, one might consider the following passages. This material comes from a dialogue between the Chinese intellectual He Xin and the Japanese economist Susumu. The dialogue first appeared in *Beijing Review*, a Chinese publication aimed at foreigners. *People's Daily* devoted almost an entire issue of its foreign edition to reprinting it. [43] *New China Digest* later reproduced this dialogue as well. From these numerous printings, one can conclude that the Chinese regime considers these ideas salutary:

[He Xin:] We've noticed that while grain-producing countries such as the United States, Canada, and Australia are facing problems in selling excessive grain, many poverty-stricken countries face famine. That is the reality of today's world economy.

After the change in Eastern Europe last year, some believed that world capitalism was entering a golden age. My personal view is just the opposite. In my opinion, during the next 10-20 years the entire capitalist world system will experience the most profound and serious crisis since the dawn of history.

[Susumu:] Stalin once predicted an overall crisis of the capitalist world economy.

[He Xin:] Based on the present situation, his remarks were made a bit too early. [44]

He Xin goes on to point out that despite Keynesian stopgaps in the West, the economic crisis of Stalin's era foreshadowed a world war. In his opinion, both world wars stemmed from "the overgrowth of the developed nations' industry." [45]

One cannot know why the Chinese authorities find He's ideas so compelling. Nevertheless, one can note some ominous possibilities. The idea that struggles between wealthy countries to find new markets will lead to war is basic to Leninism. Lenin took it for granted that this war would bring down the capitalist world order and allow the communist movement to flourish. Mao, Lin Piao, and the revolutionaries of their generation would have seen a "crisis of the

capitalist world economy" as a chance to make common cause with the have-nots against the developed West. When Susumu asked whether He Xin believed that a third world war was imminent, the latter responded:

Conditions for the outbreak of a new world war are not ripe. Since the sudden change in the world situation last year [in 1989], new antagonistic political and military axes have not been formed. But the present Gulf crisis is a dangerous warning. Suppose there were a big power behind Iraq . . . [46]

Might some of China's leaders envision their own country as an eventual big power behind some future equivalent to the Iraq of the 1990s? If conditions for major war are not ripe today, might they become so tomorrow? There is no way to be sure. Blatant ideological fanaticism has fallen out of favor in the PRC, but the Beijing regime maintains that it rules according to communist principles, and that these principles are integral to China's existence as an independent nation.

Chinese writers of the mid-1990s praised Deng Xiaoping for adopting the concept of "East, West, South, North" foreign relations.[47] One such author noted that China had achieved "major victories in our diplomatic struggles" by forming coalitions of "Eastern" (defined by that writer as peace-loving) and "Southern" (i.e. underdeveloped) countries.[48] Ironically enough, if China's food policies impoverish the developing world, the PRC may find developing nations even more willing to join it in coalitions against the rich West. Such coalitions might help Beijing compensate for the increased levels of economic dependency it would suffer as a food importer. A sharper and more militant North/South divide would not, however, increase the prospects for world peace.

The Price of Failure

Despite China's problems with its food supply, the Chinese do not appear to be in danger of widespread starvation. Nevertheless, one cannot rule out the prospect entirely, especially if the earth's climate actually is getting warmer. The consequences of general famine in a country with over a billion people clearly would be catastrophic. The effects of oil shortages and industrial stagnation would be less lurid, but economic collapse would endanger China's political stability whether that collapse came with a bang or a whimper.

PRC society has become dangerously fractured. As the coastal cities grow richer and more cosmopolitan while the rural inland provinces grow poorer, the political interests of the two regions become ever less compatible. Increasing the prospects for division yet further, Deng Xiaoping's administrative reforms have strengthened regional potentates at the expense of central authority. As Kent Calder observes,

In part, this change [erosion of power at the center] is a conscious devolution, initiated by Deng Xiaoping in 1991 to outflank conservative opponents of economic reforms in Beijing nomenclature. But devolution has fed on itself, spurred by the natural desire of local authorities in the affluent and increasingly powerful coastal provinces to appropriate more and more of the fruits of growth to themselves alone.[49]

Other social and economic developments deepen the rifts in Chinese society. The one-child policy, for instance, is disrupting traditional family life, with unknowable consequences for Chinese mores and social cohesion.[50] As families resort to abortion or infanticide to ensure that their one child is a son, the population may come to include an unprecedented preponderance of young, single men. If common gender prejudices have any basis in fact, these males are unlikely to be a source of social stability.

Under these circumstances, China is vulnerable to unrest of many kinds. Unemployment or severe hardship, not to mention actual starvation, could easily trigger popular uprisings. Provincial leaders might be tempted to secede, perhaps openly or perhaps by quietly ceasing to obey Beijing's directives. China's leaders, in turn, might adopt drastic measures to forestall such developments.

If faced with internal strife, supporters of China's existing regime may return to a more overt form of communist dictatorship. The PRC has, after all, oscillated between experimentation and orthodoxy continually throughout its existence. Spectacular examples include Mao's Hundred Flowers campaign and the return to conventional Marxism-Leninism after the leftist experiments of the Cultural Revolution, but the process continued throughout the 1980s, when the Chinese referred to it as the "*fang-shou* cycle." (*Fang* means to loosen one's grip; *shou* means to tighten

it.)[51]

If order broke down, the Chinese would not be the only people to suffer. Civil unrest in the PRC would disrupt trade relationships, send refugees flowing across borders, and force outside powers to consider intervention. If different countries chose to intervene on different sides, China's struggle could lead to major war. In a less apocalyptic but still grim scenario, China's government might try to ward off its demise by attacking adjacent countries.

Conclusion

To summarize, China's resource needs have global consequences. The most immediate effect of the PRC's requirements is that Beijing's attempts to buy what it needs will raise the price of food and oil on global markets. Higher prices hurt poorer countries even more than prosperous ones, and this will exacerbate both poverty and political unrest throughout the underdeveloped world. Western countries may feel obliged to offset crises with financial aid and military assistance. This will, among other things, reduce the resources that they have available for responding to other world events.

A second consequence is that China's needs may also trigger outright wars over resources. The disputes over territorial boundaries within the South China Sea reflect not only political issues of sovereignty, but the concern for the natural resources within those boundaries. In this manner, the PRC's search for oil in the South China Sea brings Beijing into conflict with its neighbors. If China attempts to seize these waters by force, it will unsettle world markets yet further. A war in the South China Sea could also compel outside powers to intervene, if only to uphold the principles of international conduct outlined in the United Nations Charter. If, for whatever reason, the intervening powers failed to win a clear-cut victory, both they and their principles would lose a dangerous amount of influence throughout the world.

Although food and energy demands are not the only reasons why China finds itself in conflict with the established world order, they do contribute to the belief that the international system does not serve China's interests. Ideology, memories of national humiliation, claims on unrecovered territory, and the timeless human urge for power all play their roles. Thus, a third consequence of China's food and energy requirements is that China's material needs drive its government to take assertive positions on many international issues, including the ones noted at the beginning of this article. If Beijing is to control dissent at home and claim access to resources abroad, it must build up its fleet, secure strategic positions around the world, resist the West's tendency to intervene against countries that violate liberal standards of human rights, demonstrate its readiness to defy the United States, and forge links with like-minded countries.

Irrespective of its political structure, the need for material resources would push any Chinese regime to adopt similar policies. Even if one believes that the Beijing government is likely to soften into something more liberal and accommodating, one should not assume that such a transformation would wipe away China's dispute with the present world order. It is wishful thinking for Americans and Europeans to assume that they can cajole the Chinese into adopting a putatively more civilized pattern of behavior. China's leaders have sound reasons for acting as they do.

Even though China's food and energy requirements have political and strategic consequences for the global community, however, it is important to remember that relations between the PRC and the rest of the world are not beyond human control. Although certain tensions between China and the established powers may be intractable, all parties to this conflict have the freedom to decide how they will react to these circumstances. Skilled statecraft on both sides may channel Sino-Western relations toward peaceful, mutually beneficial outcomes. Nevertheless, those who wish to maintain the best of the current world system would be imprudent to rely on persuasion or even passive "containment" to resolve their conflicts with China. Supporters of a liberal political order must actively advance their ideas, and they must defend the institutions, strategic positions, and material resources that make their vision of international politics possible.

NOTES

1. Simon MacKiln, "PLA Has Plan to Destroy West's Finance Systems in Dirty War," *South China Morning Post*, 18

October 1999, p. 1.

2. Nayan Chanda, "Fear of the Dragon," *Far Eastern Economic Review*, 13 April 1995, p. 28.

3. For a critique of this debate between those who support "engagement" and those who support "containment," see A. James Gregor, "Qualified Engagement: U.S. China Policy and Security Concerns," *Naval War College Review*, 52 (Spring 1999), 69-88.

4. It may be appropriate to clarify our use of political terminology such as "the West" and "liberalism." The PRC's ambitions disturb an assortment of other countries and political bodies, from the Republic of China on Taiwan to small countries in Southeast Asia to global powers such as the United States to partially imaginary institutions such as the liberal international order. This article discusses China's potential opponents in specific terms where appropriate and in general terms where convenient, while keeping in mind that these entities are not homogeneous. This article assumes, without extended digressions on political theory, that one can characterize the global economic and political status quo as "liberal" and "Western," although it incorporates a variety of regimes and geographical regions. The status quo features systems for resolving trade disputes and other disagreements which, at present, appear to suit the established powers far better than they suit China.

5. China's territorial gains include Tibet and the Paracel Islands.

6. Gary Klintworth and Murray McLean, "China and the United States: Neither Friends nor Enemies" in *China as a Great Power: Myths, Realities and Challenges in the Asia-Pacific Region*, ed. Stuart Harris and Gary Klintworth (New York: St. Martin's Press, 1995), p. 68; Kathleen A. Walsh, *U.S. Commercial Technology Transfers to The People's Republic of China* (Washington: Bureau of Export Administration, 1999), *passim*.

7. For a general study of the economic content of security, see Giacomo Luciani, "The Economic Content of Security," *Journal of Public Policy*, 8 (No. 2, 1989), 151-73.

8. John Frankenstein and Bates Gill, "Current and Future Challenges Facing Chinese Defence Industries," *The China Quarterly*, No. 146 (June 1996), p. 417.

9. US House of Representatives, Select Committee, *U.S. National Security and Military/Commercial Concerns with the People's Republic of China*, Chapter 1, "PRC Acquisition of U.S. Technology," internet, <http://www.house.gov/coxreport/chapfs/ch1.html>, accessed 31 May 2001.

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11. Mamdouh G. Salameh, "China, Oil and the Risk of Regional Conflict," *Survival*, 37 (Winter 1995-1996), 135.

12. *Ibid.*

13. Leif Roderick Rosenberger, "The Strategic Importance of the World Food Supply," *Parameters*, 27 (Spring 1997), 100.

14. Lester Brown, *Who Will Feed China? Wake up Call for a Small Planet* (New York: W. W. Norton/Worldwatch Institute, 1995), *passim*. Xikang Chen, "Feeding One Billion: A Study on China's Grain Problem in the Twenty-First Century," *Chinese Economic Studies*, 29 (January-February 1996), 23.

15. Kent E. Calder, *Asia's Deadly Triangle: How Arms, Energy and Growth Threaten to Destabilize Asia-Pacific* (London: Nicholas Brealey Publishing, 1996), pp. 54-55.

16. For a more benign assessment of future petroleum needs, see Robert A. Manning, *The Asian Energy Factor: Myths and Dilemmas of Energy, Security and the Pacific Future* (New York: Palgrave, 2000), pp. 17-40.

17. Qian Qichen, "The Changing World Situation and China's Foreign Affairs," in *China Documents Annual: 1990*,

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18. Li Jijun, *Traditional Military Thinking and the Defensive Strategy of China* (Carlisle, Pa.: US Army War College, Strategic Studies Institute, 1997), p. 4.
 19. Christina Lamb, "China Puts `700,000 Troops' on Sudan Alert," *Daily Telegraph*, 27 August 2000, internet, www.telegraph.co.uk, accessed 31 May 2001.
 20. See Manning, p. 74.
 21. Richard Baum, "The Road to Tiananmen: Chinese Politics in the 1980s" in *The Politics of China: The Eras of Mao and Deng*, ed. Roderick MacFarquhar (Cambridge, Eng.: Cambridge Univ. Press, 1993), p. 376.
 22. Joseph Fewsmith, "Reaction, Resurgence and Succession: Chinese Politics Since Tiananmen," in MacFarquhar, p. 485.
 23. Allen S. Whiting, "Chinese Nationalism and Foreign Policy After Deng," *The China Quarterly*, No. 142 (June 1995), p. 304.
 24. Greg Austin, "The Strategic Implications of China's Public Order Crisis," *Survival*, 37 (Summer 1995), 8.
 25. Zhang Xuebin, "Two `isms' on the Same Vine," *Jiefangjun Bao*, reprinted in *BBC Summary of World Broadcasts*, FE/3758 G/2, 8 February 2000.
 26. See Manning, p. 108.
 27. On the importance of Central Asia to China's future energy needs, see Rosmarie Forsythe, *The Politics of Oil in the Caucasus and Central Asia*, Adelphi Paper 300, International Institute for Strategic Studies (London: Brassey's, March 1996); Stephen J. Blank, *Energy, Economics, and Security in Central Asia: Russia and its Rivals* (Carlisle, Pa.: US Army War College, Strategic Studies Institute, May 1995), pp. 26-30; Dianne L. Smith, *Central Asia: A New Great Game?* (Carlisle, Pa.: US Army War College, Strategic Studies Institute, June 1996), pp. 27-29.
 28. "Armed Forces to `Protect' Territorial Waters," FBIS-EAS-94-216, 8 November 1994, p. 88.
 29. Salameh, p. 134.
 30. See Yongzheng Yang and Wiming Tian, "Agricultural Reform: An Unfinished Long March," in *China's Agriculture at the Crossroads*, ed. Yongzheng Yang and Wiming Tian (New York: St. Martin's Press, 2000), pp. 1-18.
 31. Vaclav Smil, "Who Will Feed China?" *The China Quarterly*, No. 143 (September 1995), p. 809.
 32. See Jun Jing, "Introduction: Food, Children, and Social Change in Contemporary China," in *Feeding China's Little Emperors: Food, Children, and Social Change*, ed. Jun Jing (Stanford, Calif.: Stanford Univ. Press, 2000), p. 21.
 33. Chen, pp. 28-36. Chen agrees that China could face a problem with the loss of cultivated land, but Chen believes that China has stabilized its cropland and that its size will not diminish for the next 35 years. How realistic this prediction is remains to be seen.
 34. See Colin A. Carter, "The Urban-Rural Income Gap in China: Implications for Global Food Markets," in *Food Security in Asia: Economics and Policies*, ed. Wen S. Chen, Colin A. Carter, and Shun Yi-Shei (Northampton, Mass.: Edward Elgar Publishing, 2000), pp. 19-35.
 35. Smil, p. 813. A combination of well-known and well-proven economic and technical fixes--better management, better pricing, better inputs, and better environmental protection--can extract enough additional food from China's agro-ecosystems to provide decent nutrition during the next generation.

36. Ibid.
37. There is considerable controversy over the question of how severe China's food shortages are likely to be, but there is a consensus that China will face them in one form or another. Brown, *passim*; Christopher Findlay and Andrew Watson, "Economic Growth and Trade Dependence in China," in *China Rising: Nationalism and Independence*, ed. David S. G. Goodman and Gerald Segal (London: Routledge, 1977), pp. 122, 128; Rosenberger; Nikos Alexandratos, "China's Projected Cereals Deficits in a World Context," *Agricultural Economics*, 15 (No. 1, 1996). Findlay and Watson sampled several assessments, optimistic to pessimistic, of China's trade in grain. While not all would suggest a dangerous shortage, all of them agreed that China would be facing an increased dependence upon grain imports.
38. Liu Huaqing, "Defense Modernization in Historical Perspective" in *Chinese Views of Future Warfare*, ed. Michael Pillsbury (Washington: National Defense Univ. Press, 1998), p. 118.
39. Shen Zhongchang, Zhang Haiying, and Zhou Xinsheng, "21st Century Naval Warfare," in Pillsbury, p. 261.
40. Chanda.
41. See Ron Duncan, "A Changing Global Food Market: Implications for China," in Yang and Tian, pp. 34-48.
42. Robert L. Paarlberg, "Rice Bowls and Dust Bowls: Africa, not China, Faces a Food Crisis," *Foreign Affairs*, 75 (May-June 1996), 127-32. See also Chen, p. 28 (Chen mentions that China's increased demand will affect the poorer grain importing countries); and Smil, p. 803. Even if a relatively rich China could afford to buy increasing quantities of cereals on the world market, such purchases would not just lead to price rises in a handful of remaining countries exporting food, they would also gravely reduce, or virtually remove, the access of many poorer nations in Africa and Asia to grain deliveries from the four producers with substantial long-term export potential, the United States, Canada, Australia, and Argentina.
43. He Xin, "The World Economic Situation and China's Economic Problems; Record of the Talk Between He Xin and Japanese Economics Professor Susumu Yabuki," in Moody, p. 350.
44. Ibid., p. 355.
45. Ibid.
46. Ibid.
47. Zheng Qinsheng, "Military Conflicts in the New Era," in Pillsbury, p. 400.
48. Ibid.
49. Calder, p. 113.
50. See James L. Watson, "Food as a Lens: The Past, Present, and Future of Family Life in China," in Jing, pp. 199-212.
51. Baum, p. 341.

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