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Domestic Trends

in the United States, China, and Iran

Implications for U.S. Navy Strategic Planning

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Prepared for the United States Navy

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Summary

This monograph is the second in a series of strategic studies conducted by the RAND Corporation for the U.S. Navy’s Office of the Chief of Naval Operations, Assessment Division (N81). The initial research was conducted in the summer and fall of 2006. Entitled “Evolving Strategic Trends, Implications for the U.S. Navy,” that first study was intended for a select Navy audience. It identified likely major global strategic trends in the next decade and how they might influence Navy planning. As a result of that study, N81 asked RAND to conduct a follow-on effort that focused primarily on the domestic trends of the United States, China, and Iran. The Navy wanted insights on how these important trends could influence U.S. security decisions in general and the Navy’s allocation of resources in particular.

Study Approach

Whereas the first strategic-trends study was primarily concerned with security-related issues around the world that could influence U.S. military planning, this monograph discusses internal, nonmilitary trends in the United States, the People’s Republic of China (PRC), and Iran. The Navy is interested in these countries’ likely key “resource drivers” from now through roughly 2020–2025.¹ Accordingly, we examined important domestic trends in each country—in demographics,

¹ The period covered by data related to future economic and demographic projections for the United States, China, and Iran varied. In some cases, projections through 2020 were

economics, energy consumption, the environment, and education—to gain an understanding of each nation’s likely “big issues.” Depending on how much of a challenge those issues become in the United States, China, and Iran, the Navy may have to divert considerable resources to address emerging problems.

Although our primary focus is on domestic trends in each nation, this monograph also examines each nation’s so-called near abroad. We conducted this research to determine how much of a challenge each of the three nations will experience in their own immediate “neighborhoods.” In the case of the United States, this neighborhood includes the Caribbean, Central America, Mexico, and northern South America. We divided China’s near abroad into three general regions: the east-northeast (where most of China’s near-term security challenges lie), the south and southeast, and the west. In Iran’s near abroad, the Middle East, we examine how the current turbulent situation might influence Iran’s strategic planning and resource-allocation decisions.

N81 also asked that we examine the near abroads of Russia and Japan. This was considered important due to each country’s relationship with the three primary countries. For example, China closely watches how Japan’s security policy is evolving, and also has a very important relationship with Russia. Our assessments of Russia and Japan do not include the more-detailed research on domestic trends we conducted for the three primary nations.

The United States

The United States will remain the richest nation in the world during the period covered in this monograph. Today, the U.S. economy is roughly \$13 trillion. That total is projected to rise to roughly \$30 trillion by 2020. Thus, most of the U.S. population will continue to enjoy rising standards of living.

available; in other cases, projections extended out through 2025. Therefore, this study’s “out years,” the far-term planning horizon, are 2020–2025.

The main challenge that the United States will experience from now until 2025 (and beyond) will arise from the increasing numbers of elderly Americans. Today, there are approximately three active workers for each recipient of Social Security. That ratio will drop to two workers per retiree by about 2015. Elderly people require considerably more health care and other social services compared to younger portions of the population. Social Security expenditures will increase during this period, but the main increase will occur in Medicare and Medicaid, the federal government's health programs for those over the age of 65. Although the U.S. economy is projected to expand annually from now until 2025, social spending for America's growing numbers of elderly citizens will consume an ever-increasing portion of the federal budget and the overall economy. This increase will constrain other spending programs, including national defense. After 2015, given this projected need for an increase in social spending for the elderly, and absent a clearly perceived threat comparable to that posed by the Soviet Union during the Cold War, it is likely that senior U.S. policymakers will be less willing—and possibly less able—to devote as much of the nation's wealth to defense as they did during the Cold War or even today's global war on terrorism.

Despite the coming challenge of increased social spending as “baby boomers” enter their retirement years, the United States is a rich nation that will be able to provide for increasing numbers of elderly citizens (if it chooses to do so). In that regard, “the United States became rich before it became old.” We will see that a different situation prevails in China.

The United States has also been fortunate that it has not had to devote considerable military resources to its near abroad since the Spanish-American War of 1898. Although there have been occasional periods of tension (such as the Cuban Missile Crisis of the early 1960s), the United States has generally been able to keep its military focused in other, more-distant regions. Whether that favorable situation will continue depends in large part on (1) whether there is a sustained increase in the popularity of anti-American, leftist regimes in Latin American (such as Hugo Chavez's Venezuela) and (2) events in post-Castro Cuba,

where a chaotic situation could result in some form of protracted U.S. military intervention.

China

The PRC has enjoyed 30 years of explosive economic growth. This economic growth has enabled China to undertake a significant military modernization program for the past several years. In the near to medium term (i.e., through roughly 2020), the growth of China's economy will continue to enable the Chinese to expand the nation's military capabilities. Projections of China's gross domestic product (GDP) in 2020 vary considerably, ranging from \$12 trillion to \$15 trillion. We argue that mounting internal pressures will limit China's ability to expand militarily into the out years.

China has entered into a Faustian bargain, however. In exchange for wealth and military power, China has sacrificed its energy (coal) future, embarked on a program of unsustainable economic growth, sacrificed the well-being of its elderly, and allowed extensive environmental damage to occur. These problems are intertwined. The depletion of coal reserves, for example, will encourage the Chinese to use lignite coal, a fuel source that produces less energy and more pollution than higher grades of coal. Increased use of lignite would increase pollution and thus lead to increased acid rain and environmental degradation.

Until recently, China has been self-sufficient in coal. It now uses coal for about 70 percent of its electrical power. Coal consumption in China has roughly kept pace with China's economic growth, increasing by 80 percent since 2000 and 2,000 percent since China's last publicly released coal survey in 1992. Several recent credible studies suggest that China's coal production will peak sometime between 2015 and 2025, with coal production levels between 2030 and 2040 falling below current levels unless significant new reserves are found. Even if new reserves are located, China could face significant challenges in extraction, coal quality, and infrastructure. In addition to significantly increasing its oil and natural gas imports, China is transitioning from a net exporter of coal to a net importer.

Note, however, that some of the data underlying these figures are uncertain. For example, coal-reserve estimates could be low, and coal is still being discovered in China.² Furthermore, growing coal shortages could encourage both exploration for additional sources of coal and greater coal production efficiency. Some coal geologists argue that China has a 2,500-year history of organized coal production, making further major coal finds unlikely. Coal engineers point to problems in increasing the efficiency of mines that have not achieved acceptable safety levels. Clearly, exponentially increased consumption rates have correspondingly advanced the date of China's coal peak. What appears certain is that as the years go by, China will have to import a larger amount of coal to meet its requirements. This greater dependence on foreign coal could affect international coal prices. (However, because coal is more globally plentiful than oil, increased Chinese coal imports are not likely to affect coal prices.) Greater dependence will probably result in increasing Chinese ties with the nations from which it imports coal (e.g., Australia).

Until recently, China was self-sufficient in oil; in fact, China was actually an oil exporter until 1993. Oil production in China has not yet peaked, but China's demand for oil under a burgeoning economy has outstripped production. China's urbanization, together with the increased affordability of automobiles, has accelerated and will continue to accelerate China's oil demand. As a newcomer to the international oil market, China first turned to lesser producers (such as Oman) and sought exclusive drilling rights as a means to secure oil supplies. More recently, China has turned to Africa and Iran for oil. Perhaps deliberately, China has, through its choice of oil suppliers, avoided competition or confrontation with the United States in the international oil market. Current trajectories of oil consumption suggest, however, that this pattern will break as China turns to the Greater Middle East for oil. Competition for access to affordable energy sources could become a source of friction in Sino-U.S. relations.

² Historically, however, China's coal-reserve estimation technology has significantly over-estimated coal reserves elsewhere in the world.

China's economy has consistently experienced the world's highest growth rate since the early 1980s, posting an average growth of 10 percent, according to official figures. Although this growth is remarkable, it is not unprecedented. Other Asian economies, such as those of Taiwan, South Korea, and Japan, demonstrated similarly strong growth at the peak of their development trajectories; most of these economies then experienced subsequent slowdowns to more-sustainable growth levels. Meanwhile, the sheer scale of China's internal needs is daunting, and the gap between China and the most-developed nations is clear. For example, China's 2005 GDP per capita was roughly \$1,700, a level comparable to that of the United States in 1850.

China's economic progress is complicated by the unique challenges that the country faces as the world's most populous nation. It is also complicated by the fact that China is simultaneously developing and transitioning its economy from a closed, communist command system to a market-driven, open system. Factors that once contributed to China's past growth—including greater openness to trade, improved technology, and a large, youthful labor pool—will contribute less to China's economic growth in the future. Continued reform will require the Chinese Communist Party (CCP) to cede more control to the private sector, thereby weakening the CCP's role in the economy. The CCP has refused to cede control in some major areas, such as coal production, thereby creating economic distortions throughout the economy. Knowing that deeper economic reforms will entail political risk, it is not clear how much farther the CCP will be willing to go in economic reforms. Furthermore, the following existing structural impediments and habitual problems are expected to weaken China's future economic growth:

- The dysfunctional banking system supports approximately 150,000 unprofitable state-owned enterprises that suck resources from enterprises that may be more efficient and profitable.
- China is overly dependent on exports, overinvestment, and undervalued currency for growth.
- Inadequate educational systems produce unqualified graduates.

- China's poor protection of intellectual property rights discourages innovation.

China's once-youthful labor force is aging, and the declining number of active workers will become an economic liability. More generally, China's aging population will present major challenges in the medium to far term (i.e., from 2015 to roughly 2025). China's baby boomers were born in the 1960s, and therefore its working-age population will begin to shrink after 2015. In 2034, in some regions of China, dependents will outnumber active workers.

In transitioning from a command-driven economy to a free-market economy, China has failed to establish a well-funded social security system. Over 300 million Chinese agricultural workers have no social security, and urban workers' social security accounts are underfunded by more than \$1 trillion. Today, there are approximately seven active workers for every retiree in China. By 2020, that ratio will drop to only two workers per retiree. Meanwhile, and in spite of the fact that the Chinese economy will continue to grow, China's per capita GDP increases will still leave the nation rather poor by the standards of the industrial world. Compared to the United States, then, it can be said that "China will get old before it gets rich."

By 2025, more than 300 million Chinese citizens will be age 66 or older. This will place a great strain on the nation's social services, which today are considerably behind those of the United States, Japan, and most of Europe. Chinese workers have limited access to health insurance, and preventative health care for children is lagging. More importantly, China's medical system is wholly unprepared to serve its aging population. The strain that an increased number of elderly Chinese will place on China's resources after 2020 will almost certainly affect on the nation's ability to continue a major military buildup.

China has serious and growing environmental problems. Water is scarce and polluted. Two-thirds of China's cities now experience significant water shortages. Over half of all urban waste water is untreated, and over three-quarters of river water in urban areas is unsuitable for drinking or fishing. Many of China's rivers are polluted to levels incomprehensible to most Westerners; these waters are deemed too pol-

luted for any beneficial use, even industrial use. Economic growth and the degradation of China's rivers have increased demands for groundwater. China's deserts are spreading: More than a quarter of China's land is now desert. Groundwater in some regions of China is expected to be exhausted within 15 years, leaving residents without usable water. Economic growth will be retarded by a growing "bow wave" of environmental damage (which is estimated to be slowing China's current GDP growth by about 5 percent).

The rapid industrialization of many of the country's urban areas has entailed high levels of air pollution. These levels are much higher than would be tolerated in the United States or most of Europe. As observed above, China has dramatically increased the use of coal for electrical power to meet its rapidly growing energy needs; it plans to open scores of new coal-fired power plants in the coming years. China's coal is relatively dirty and the country has not invested adequately in coal-cleaning facilities. China's approximately 400,000 coal-fired industrial facilities nationwide produce millions of tons of ash and sulfur dioxide, a source of acid rain.

By 2020, China will enter a "perfect storm" of economic, environmental, and social problems largely of its own making. In the next 10–15 years, while trying to grow and transform its economy, China will confront the intertwined problems of premature depletion of its energy resources, faltering economic growth, inadequate provisions for its aging population, and the need to remediate an extensively damaged environment. China's ability to modernize and expand its military at the same time will be constrained by these domestic challenges.

The PRC's current relations with nations in its near abroad vary considerably. Chinese relations with countries to the south (e.g., Vietnam and India) are better than at any point in the past three decades. Mutual economic interest has contributed greatly to this improved situation. Of significant importance is China's increasing westward strategic orientation into Central Asia and the Middle East. In the near to medium term (i.e., from today through approximately 2020), China will increase its involvement in the former Soviet republics of Central Asia and further expand its growing presence in the Middle East, including Iran. China's rapidly expanding energy needs guarantee that

this trend will continue for the foreseeable future. Areas east and north-east of China pose the greatest threat to China in the near to medium term. How the situation with Taiwan evolves in the next decade will have great bearing on Sino-Japanese and Sino-U.S. relations. In addition to the still-uncertain situation with Taiwan, there is potential for a crisis in northeast Asia, where the Stalinist regime of North Korea has acquired nuclear weapons. The Japanese are watching developments in Taiwan and the Korean Peninsula with considerable interest, and a significant change in Japan's security policy is possible. The PRC is likely to take seriously any Japanese actions that may threaten Chinese interests.

Iran

Iran is rich in oil and natural gas. It also has one of the best primary and secondary education systems in the Muslim world. It therefore has the means to develop a healthy economy. However, major structural problems in its economy and political system are causing the country to perform far below its theoretical potential.

Iran's government has been largely ineffective in harnessing the country's energy potential. The country's high unemployment and underemployment rates have resulted in rising numbers of jobless youths. The lack of employment opportunities has contributed to the country's ongoing "brain drain," and tens of thousands of its middle and educated classes depart the nation each year in search of better opportunities elsewhere. Over the next 20 years, Iran's per capita income will grow only modestly.

Iran's inability to adequately exploit its economic potential means that Iran will lack the ability to create a military force that can dominate the entire Middle East. However, as long as current ideology continues to dominate Iran's government, Iran will remain generally opposed to U.S. interests in the region. More likely than any direct confrontation with the United States and European nations is the possibility that Iran will attempt to undermine the U.S. position in the region through more-clandestine means (such as support to terrorist

groups and proxies, including Hezbollah). Additionally, Iran will seek out a major ally in the form of Russia, China, or both. If either nation strongly backs Iran, Iran will be more likely to become emboldened in its willingness to challenge U.S. interests in the region. Iran's pursuit of nuclear weapons, and its possible success in that regard, is another issue that could destabilize the entire region.

If Iran's economy continues to underperform, the role of the Iranian military could increase. This could lead to a situation roughly similar to the role of the armed forces in Pakistan or Turkey, which dominate many aspects of government. In the case of Iran, an important issue would be the relative strength of the Revolutionary Guard and the conventional branches of the military.

Japan

Japan will remain the richest nation in Asia through the out years.³ However, the country's population will age considerably. Unlike the United States, but like China, Japan admits few immigrants. With low immigration levels and a very low birthrate, Japan's population levels are bound to decline in the coming decades. This demographic trend will force changes in social spending in Japan, as will be the case in the United States and China.

Of primary concern for this study were Japan's relations with its near abroad. In that regard, Japan has three major strategic options:

- strengthening its ties with the United States—this is Japan's present course of action
- reaching an accommodation with the PRC—a strategy that acknowledges that U.S. power in Asia is waning, while China's is rising
- adopting a more independent course of action in terms of foreign and security policy—this option may ultimately entail acquiring a nuclear-deterrent capability.

³ As previously noted, RAND examined Japan's near-abroad issues only.

Japan's choice will be of very great interest to the United States and China.

Russia

Following a near-disastrous decade after the collapse of the Soviet Union, Russian strength is starting to rise again.⁴ Russia is currently benefiting from the rise in oil and natural gas prices, which has facilitated renewed modernization efforts by the Russian military. Meanwhile, Russia is taking an increasingly assertive approach to its own near abroad.

Of vital interest to the United States is how Russian relations with Iran and China evolve in the coming decade. Iran clearly wants support from Russia, China, or both. Meanwhile, the evolving Sino-Russian relationship could develop in a way that opposes U.S. interests. Russia is also becoming increasingly assertive with former Soviet republics, especially those in Central Asia. This might lead to tension with China, since the PRC is leaning westward due to its growing energy needs.

Implications for the U.S. Navy

Although the United States will remain the world's richest nation for the next 20–30 years, the steady aging of its population will create major shifts in federal spending in the future. In the absence of a clearly perceived threat comparable to the Cold War–era Soviet Union, spending will gradually shift away from defense and toward the increased social services needed to support an older population.

Meanwhile, U.S. dependence on foreign energy sources will continue to grow. Thus, the Navy will be required to continuously maintain powerful forces in the Middle East and the Western Pacific.

⁴ As previously noted, RAND examined Russia's near-abroad issues only.

Depending on the nature of the threats in those regions, the kind of naval forces required could vary considerably.

The Navy faces uncertainty about the degree to which it will have to prepare for (1) a “high-end” future conflict against a powerful, well-armed opponent (e.g., China) versus (2) the so-called Long War against rogue nations and terrorist organizations (e.g., Iran and various radical nonstate groups). In the latter case, the Navy will have to invest more heavily in amphibious, coastal patrol, and sea-basing capabilities that are conducive to supporting Army, Marine Corps, and coalition forces that are engaged in irregular warfare ashore. This uncertainty about the future produces the classic “blue-water” versus “green/brown-water” investment conundrum that the Navy has faced in previous years. If the situation in the U.S. near abroad deteriorates, the Navy may also find itself having to devote more resources in that direction.

The Navy will therefore have to balance its investment decisions around the following realities:

- As the years go by, increasingly powerful budgetary and political forces in the United States will tend to downplay military spending.
- Absent a clearly perceived foreign threat, willingness to spend considerable sums on defense will decrease over time, and resources will instead be directed toward social spending.
- The United States will need to acquire the appropriate numbers and types of naval forces to prepare for both of the two possible scenarios (the high-end conflict and the Long War).
- The Navy will have to continue providing forward presence in a variety of missions in regions critical to the United States. This obligation could include dealing with the implications of shifting alliance and coalition arrangements in critical regions.

Many of the Navy’s decisions will depend on the evolution of U.S. relations with China and Iran and the direction of the Long War during the next ten years. Given the long lead times associated with Navy programs and the decades-long life span of Navy platforms once constructed, the effects of the Navy’s important near-term decisions will endure well beyond the out years.