

USCC 2014 ANNUAL REPORT



2014
REPORT TO CONGRESS
of the
**U.S.-CHINA ECONOMIC AND
SECURITY REVIEW COMMISSION**

ONE HUNDRED THIRTEENTH CONGRESS
SECOND SESSION

NOVEMBER 2014

Printed for the use of the
U.S.-China Economic and Security Review Commission
Available via the World Wide Web: <http://www.uscc.gov>



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WASHINGTON : 2014



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The Commission was created on October 30, 2000, by the Floyd D. Spence National Defense Authorization Act for 2001 § 1238, Pub. L. No. 106-398, 114 STAT. 1654A-334 (2000) (codified at 22 U.S.C. § 7002 (2001), as amended by the Treasury and General Government Appropriations Act for 2002 § 645 (regarding employment status of staff) & § 648 (regarding changing annual report due date from March to June), Pub. L. No. 107-67, 115 STAT. 514 (Nov. 12, 2001); as amended by Division P of the “Consolidated Appropriations Resolution, 2003,” Pub. L. No. 108-7 (Feb. 20, 2003) (regarding Commission name change, terms of Commissioners, and responsibilities of Commission); as amended by Pub. L. No. 109-108 (H.R. 2862) (Nov. 22, 2005) (regarding responsibilities of Commission and applicability of FACA); as amended by Pub. L. No. 110-161 (Dec. 26, 2007) (regarding changes in annual report due date; submission of financial reports; printing and binding of Congressional reports; employee compensation and performance reviews; and applicability of House rules for travel by members and staff).

The Commission’s full charter <http://www.uscc.gov/about/uscc-charter> and Statutory Mandate http://www.uscc.gov/about/fact_sheet are available via the World Wide Web.

U.S.-CHINA ECONOMIC AND SECURITY REVIEW COMMISSION

NOVEMBER 20, 2014
The Honorable Patrick Leahy,
President Pro Tempore of the U.S. Senate, Washington, DC 20510
The Honorable John Boehner,
Speaker of the U.S. House of Representatives, Washington, DC 20510

DEAR SENATOR LEAHY AND SPEAKER BOEHNER:

On behalf of the U.S.-China Economic and Security Review Commission, we are pleased to transmit the Commission's 2014 Annual Report to the Congress—the twelfth major Report presented to Congress by the Commission—pursuant to Public Law 106–398 (October 30, 2000), as amended by Public Law No. 109–108 (November 22, 2005). This Report responds to the mandate for the Commission “to monitor, investigate, and report to Congress on the national security implications of the bilateral trade and economic relationship between the United States and the People’s Republic of China.” The Commission reached a broad and bipartisan consensus on the contents of this Report, with all 12 members voting to approve and submit it to Congress.

In accordance with our mandate, this Report, which is current as of October 17, includes detailed treatment of our investigations of the areas identified by Congress for our examination and recommendation. These areas are:

- **PROLIFERATION PRACTICES**—The role of the People’s Republic of China in the proliferation of weapons of mass destruction and other weapons (including dual-use technologies), including actions the United States might take to encourage the People’s Republic of China to cease such practices;
- **ECONOMIC TRANSFERS**—The qualitative and quantitative nature of the transfer of United States production activities to the People’s Republic of China, including the relocation of high technology, manufacturing, and research and development facilities, the impact of such transfers on United States national security, the adequacy of United States export control laws, and the effect of such transfers on United States economic security and employment;
- **ENERGY**—The effect of the large and growing economy of the People’s Republic of China on world energy supplies and the role the United States can play (including joint research and development efforts and technological assistance) in influencing the energy policy of the People’s Republic of China;
- **UNITED STATES CAPITAL MARKETS**—The extent of access to and use of United States capital markets by the People’s Republic of China, including whether or not existing disclosure and transparency rules are adequate to identify People’s Republic of China companies engaged in harmful activities;

- **REGIONAL ECONOMIC AND SECURITY IMPACTS**—The triangular economic and security relationship among the United States, [Taiwan] and the People’s Republic of China (including the military modernization and force deployments of the People’s Republic of China aimed at [Taiwan]), the national budget of the People’s Republic of China, and the fiscal strength of the People’s Republic of China in relation to internal instability in the People’s Republic of China and the likelihood of the externalization of problems arising from such internal instability;
- **UNITED STATES–CHINA BILATERAL PROGRAMS**—Science and technology programs, the degree of noncompliance by the People’s Republic of China with agreements between the United States and the People’s Republic of China on prison labor imports and intellectual property rights, and United States enforcement policies with respect to such agreements;
- **WORLD TRADE ORGANIZATION COMPLIANCE**—The compliance of the People’s Republic of China with its accession agreement to the World Trade Organization (WTO); and
- **FREEDOM OF EXPRESSION**—The implications of restrictions on speech and access to information in the People’s Republic of China for its relations with the United States in the areas of economic and security policy.

The Commission conducted seven public hearings, taking testimony from 60 witnesses that included members of Congress, the executive branch, industry, academia, think tanks and research institutions, and other experts. For each of these hearings, the Commission produced a transcript (posted on its website at www.uscc.gov). The Commission received a number of briefs by executive branch agencies, the Intelligence Community, and the Department of Defense, including classified briefings on China’s military aerospace modernization, China-Russia relations, China-Middle East relations, China-North Korea relations, and China’s activities in the East China Sea. The Commission is preparing a classified report to Congress on these and other topics. The Commission also received briefs by foreign diplomatic and military officials as well as U.S. and foreign nongovernmental experts.

Commissioners made official delegation visits to South Korea and Australia to hear and discuss perspectives on China and its global and regional activities. In these visits, the Commission delegation met with U.S. diplomats, host government officials, business representatives, academics, journalists, and other experts. The Commission officially requested the opportunity to visit China this year, but this request was denied by Chinese government authorities.

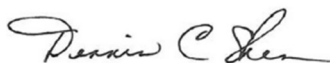
The Commission also relied substantially on the work of our excellent professional staff and supported outside research in accordance with our mandate.

The Report includes 48 recommendations for Congressional action. Our ten most important recommendations appear on page 29 at the conclusion of the Executive Summary.

We offer this Report to Congress in the hope that it will be useful as an updated baseline for assessing progress and challenges in U.S.-China relations.

Thank you for the opportunity to serve. We look forward to continuing to work with you in the upcoming year to address issues of concern in the U.S.-China relationship.

Yours truly,



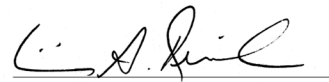
Dennis C. Shea
Chairman




William A. Reinsch
Vice Chairman

Commissioners Approving the 2014 Report


Dennis C. Shea, Chairman



William A. Reinsch, Vice Chairman



Carolyn Bartholomew, Commissioner

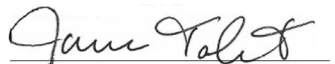

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EXECUTIVE SUMMARY

Chapter 1: U.S.-China Economic and Trade Relations

Year in Review: Economics and Trade

In 2014, China's government focused on stimulating its economy to achieve official growth targets, rather than implement substantive economic reform. Although the Chinese government pledged not to employ large-scale stimulus in 2014, Beijing implemented expansionary fiscal initiatives throughout the year, including subsidized fixed investment and exports, credit loosening, and tax incentives to bolster its economy. These measures enabled China to sustain economic growth at or near its official target rate of 7.5 percent through the first three quarters of 2014. However, the government failed to address China's underlying structural problems, such as oversupply, overcapacity, mounting local government debt, and asset bubbles that put its economy at risk of a sharp slowdown or "hard landing." In 2013, Chinese President Xi Jinping laid out a sweeping economic reform agenda during the Third Plenum of the Chinese Communist Party (CCP) to address many of China's underlying economic problems. President Xi's proposed reforms include a revised tax system, financial liberalization, and partial reform of restrictions on imports and inbound foreign investment. However, President Xi's government made minimal progress in implementing these reforms in 2014, and it remains unclear whether the Xi government will accelerate reform in 2015.

Meanwhile, China's economic imbalances—both external and internal—continue to burden the U.S. and global economies. China's dependence on exports for growth, a policy supported by an undervalued currency, has resulted in China's accumulation of record foreign currency reserves, and contributes to global trade imbalances. Despite China's economic slowdown, its exports continue to grow, and China in 2014 sustained its global trade surplus. In the first eight months of 2014, the U.S.-China trade deficit increased by 4.1 percent year-on-year to a total of \$216 billion. Domestically, the government's failure to shift the economy toward a more consumption-based growth model maintains China's overdependence on exports and investment and limits opportunities for U.S. exports to China.

In 2014, Chinese direct investment flows into the United States exceeded U.S. investment into China for the first time as foreign firms faced an increasingly hostile investment climate in China. According to data from China's Ministry of Commerce, foreign direct investment (FDI) into China declined 1.8 percent in the first eight months of 2014 compared to the same period in 2013. China ramped up use of its Anti-Monopoly Law against foreign firms in what appears to be unequal enforcement in order to create favor-

able market conditions for Chinese competitors. China used the Anti-Monopoly Law to investigate foreign firms in sectors designated by the government as “strategic and emerging,” including automobiles and information technology. In addition, uneven enforcement of Chinese laws, lack of transparency, and state-run media attacks on foreign firms contributed to further deterioration of the foreign investment climate in China. At the same time, China accelerated its 2001 “go out” policy, which encourages Chinese firms to expand their global presence. In the United States, stock of Chinese FDI grew from \$1.9 billion in 2007 to \$17 billion in 2012.

Trade tensions between the United States and China escalated in 2014 as key World Trade Organization (WTO) cases advanced or were concluded and the U.S. Department of Justice filed indictments against five Chinese People’s Liberation Army (PLA) soldiers for engaging in state-sponsored, cyber-enabled theft of commercial property. The WTO Dispute Resolution Panel ruled in favor of U.S. claims that China was imposing unlawful export restrictions on rare earths and antidumping and countervailing duties on U.S. automobile imports. However, several trade disputes with China remain unresolved or uncontested, including China’s consistent failure to report subsidies to the WTO, localization requirements that force the transfer of U.S. technology to Chinese firms, and restricted market access in several industries.

Conclusions

- Despite U.S. exports to China growing by 6.2 percent, imbalances in the U.S.-China trade relationship increased in the first eight months of 2014 as the trade deficit grew by 4.1 percent. China stalled on liberalizing key sectors in which the United States is competitive globally, such as services. Chinese foreign direct investment (FDI) flows into the United States grew, while U.S. FDI into China fell as foreign firms faced an increasingly hostile investment climate in China.
- Supported by government stimulus, China sustained economic growth at or near its official target rate of 7.5 percent through the first three quarters of 2014. Underlying economic problems in China, including oversupply of property and industrial overcapacity, continue to put economic growth at risk of further deceleration.
- China’s chronic overcapacity, especially in sectors such as steel and solar panels, continued to harm U.S. manufacturing and exports by dumping excess supply into global markets.
- China’s government made little to no progress this year in implementing the economic reforms designated by its leadership during the 2013 Third Plenum. Instead, Chinese President Xi Jinping and his leadership team focused on a broad anti-corruption campaign, while using stimulus to avoid further economic slowdown.
- While disposable income and consumption have increased relative to savings, China has not yet weaned itself off its tradi-

tional investment and export-based growth model, and continues to struggle with large internal imbalances.

- China’s nontransparent policymaking came under criticism at the World Trade Organization, and China obstructed progress in key trade negotiations, such as the Information Technology Agreement. China’s confrontational behavior in addressing contentious territorial disputes with neighboring countries also harmed economic and trade relations in the Asia Pacific.

U.S.-China Bilateral Trade and Economic Challenges

Since China joined the WTO in 2001, U.S.-China bilateral trade has grown exponentially, but the trading relationship has become increasingly unbalanced. In the last year, China shipped nearly four dollars’ worth of goods to the United States for every dollar’s worth of imports from the United States. The resulting U.S. trade deficit with China set a record for the fourth year in a row. This deficit, non-existent three decades ago, is now the largest bilateral deficit in the world—three times the size of the second largest U.S. deficit, with Japan. Americans turn primarily to China to purchase computer and communications equipment and apparel. China’s main purchases from the United States, meanwhile, are oil seeds, aircraft, and waste and scrap. China thus has the benefit of selling more value-added goods to the United States, the production of which tends to employ more Chinese workers at higher pay. Meanwhile U.S. exports to China are falling short both in volume and in labor market value. As of the end of August 2014, the U.S. trade deficit with China already stood at \$216 billion, about \$8.5 billion more than the same time last year. At this pace, the 2014 deficit will reach another high.

The size of the overall trade deficit—and the bilateral trade deficit with China in particular—is a perennial source of concern in the United States about declining competitiveness, job losses, and Chinese companies’ unfair trade practices. Alliance for American Manufacturing President Scott Paul is among those economists blaming the U.S. trade deficit with China for “a shrinking middle class” and “fewer good job opportunities,” and “further proof that our economic policies—including a lack of enforcement of existing trade laws—contribute to outsourcing.” U.S. employment in some sectors, particularly the manufacturing sector, has dropped substantially as trade with China has increased. Since China joined the WTO, the United States has lost 29 percent of its manufacturing jobs, according to the U.S. Bureau of Labor Statistics, and economists have begun to establish clear correlations between this job loss and trade with China.

The bilateral trade imbalance is driven, in large part, by China’s mercantilist and state-directed policies. Although China promised extensive market reforms when it joined the WTO, it has been reluctant to implement them. Instead, the Chinese government has institutionalized preferences for state-owned enterprises and favored industries, particularly in areas designated as “strategic.” As a consequence, the United States continues to face challenges with China’s WTO-illegal and trade-distorting subsidies, discrimination against U.S. goods, services, and technologies, prohibited localiza-

tion requirements, and inadequate protections for intellectual property (IP), among other barriers to free trade.

The United States government uses a combination of diplomacy and enforcement tools to try to address China's unfair practices, but despite these efforts, Chinese trade violations continue and the bilateral trading relationship grows more lopsided. Unfortunately, the United States too often chooses dialogue with China over strong enforcement measures, and bilateral talks often fail to deliver much more than an expanding menu of follow-on discussions. And although the Obama Administration has significantly stepped up trade enforcement cases against China, these efforts are limited in their impact because defendants continue to rely on an array of loopholes for avoiding trade remedies.

An even bigger challenge for enforcement efforts looms ahead. In December 2016, the provision of China's WTO accession protocol that enables countries to treat China automatically as a non-market economy expires. The expiration of this WTO provision may potentially make it more difficult for the United States to levy penalty tariffs against China for dumping. This does not mean that the United States will have to recognize China as a market economy. The existing statutory test under U.S. law will still apply for purposes of determining China's status, and multiple subject matter experts testified to the Commission that China is far from meeting the criteria.

As dialogue and enforcement efforts fall short, a rapidly expanding stream of Chinese direct investment is flowing into the United States. This trend could be a boon to U.S. employment if the investments prove to be engines for job creation. However, the presence of Chinese state-owned enterprises in the United States may also pose significant competitive challenges for domestic companies, with potentially serious drawbacks for U.S. workers. Chinese investment in the United States could also create impediments for domestic industries petitioning the federal government for trade enforcement assistance, and anecdotal evidence demonstrates that state efforts to attract Chinese investment can undermine federal trade enforcement measures as well.

Conclusions

- The United States' trade deficit with China is by far its largest, and it has grown sharply in recent years to become the single biggest bilateral deficit in the world. In 2013, it reached \$318.4 billion, setting a record for the fourth straight year, with China exporting nearly four dollars' worth of goods to the United States for every dollar's worth of imports it purchased from the United States. Even as U.S. exports to China have grown, our deficit has grown faster. This deficit is associated with declining U.S. economic competitiveness and job losses, which helps explain why 52 percent of Americans now believe that China poses a critical threat to vital future U.S. economic interests.
- U.S. employment in some sectors, particularly the manufacturing sector, has dropped substantially as trade with China has increased. Since China joined the World Trade Organiza-

tion (WTO), the United States has lost 29 percent of its manufacturing jobs, according to the U.S. Bureau of Labor Statistics, and economists have begun to establish clear correlations between this job loss and the bilateral trading relationship.

- Even as U.S. manufacturing has slumped, U.S. corporations have relocated manufacturing operations to China and imports of Chinese manufactured goods have grown exponentially. As a result, the benefits of the U.S.-China trade relationship have accrued disproportionately to U.S. corporations, while most of the drawbacks have been borne by U.S. workers.
- Unfair Chinese trade practices, including market protections, subsidization, and favoritism toward certain domestic players, as well as provisions for limiting foreign investment in certain manufacturing operations, have also contributed indirectly to the ongoing decline in U.S. manufacturing employment. Although China committed to sweeping reforms when it joined the WTO, Chinese efforts to honor these commitments have slackened in the last ten years. The Chinese economy benefits from a host of policies and practices that violate the spirit, and even the letter, of Beijing's WTO commitments and harm U.S. interests. Despite a proliferation of bilateral forums for engagement, U.S. efforts to talk through these problems have consistently fallen short. Enforcement actions have increased, but the results of these efforts have been limited, and many issues remain unaddressed.
- The dominance of state-owned enterprises in the Chinese economy is one of the reasons the United States has not designated China as a market economy, despite China's active pursuit of such a designation for many years. The United States has a statutory test for determining whether an economy can be classified as a market economy. The factors to be considered under U.S. law in granting market economy status include the extent to which the country's currency is convertible, the extent to which wage rates are freely determined by negotiations between labor and management, and the extent to which the government owns or controls the means and decisions of production. Expert witnesses have testified to the Commission that China is not currently a market economy and is not on the path to become one in the near future.
- Because trade remedies are often inaccessible, they are effectively useless to smaller U.S. companies that cannot afford to pursue cases and to companies that cannot muster the threshold industry support. Available trade remedies remain inadequate and fail to account for the interests of other affected constituents, such as workers and communities; China's undervaluation of its currency, for example, continues to function as a de facto subsidy for its exports, and U.S. law still does not provide a sufficient remedy to this problem for private parties. The Administration has not been effective in getting China to change its policies. A number of U.S. petitioners have asserted claims against China's currency policy as an actionable subsidy, but the Commerce Department has refused to treat cur-

rency undervaluation as actionable under the law. Even when trade remedy cases are successful, they do not always deliver sufficient and timely relief.

- Growing Chinese investment in the United States could be a boon to U.S. employment, but the peculiarities of state influence on Chinese corporate behavior in the United States may also pose significant competitive challenges for domestic companies, with serious drawbacks for U.S. workers. Chinese investment in the United States could pose impediments to members of domestic industries petitioning the Federal Government for trade enforcement assistance, and anecdotal evidence demonstrates that state efforts to attract Chinese investment can also undermine federal trade enforcement efforts. The potential impact of inbound Chinese investment should be more thoroughly investigated and addressed.

China's Health Care Industry, Drug Safety, and Market Access for U.S. Medical Goods and Services

The healthcare sector has played a marginal role in U.S.-China relations, but that is beginning to change. China has become the world's top producer of active pharmaceutical ingredients and inert substances, as well as a significant exporter of medical products. U.S. drug companies and distributors are sourcing a large share of ingredients and finished drugs from China and selling them in the United States. Concurrently, China is experiencing a major demographic and epidemiologic transition, challenging the nation's health care system. An older and wealthier population, with a rising incidence of non-communicable diseases, is seeking more frequent and better-quality treatment. U.S. companies that market drugs, medical devices, and healthcare services view China as an important opportunity.

U.S. reliance on foreign medical products has increased substantially in the 21st century, and that trend is reflected in U.S. imports from China. The total number of shipments of products from China regulated by the Food and Drug Administration (FDA) increased from approximately 1.3 million entry lines (i.e., items such as food, drugs, and devices) in 2007 to almost 5.2 million in 2013. In a 2010 study of pharmaceutical executives, 70 percent of respondents cited China as their top source country for pharmaceutical ingredients. The United States imported over 100 million kilograms of pharmaceutical goods from China in 2013, close to a 200 percent increase over the past decade. China is a leading source of U.S. imports of vitamins, antibiotics, and nonprescription painkillers, such as ibuprofen, acetaminophen, and aspirin.

These trends are worrying because China is also a manufacturer of fake and substandard drugs. Tainted heparin, containing ingredients sourced from China, claimed at least 81 lives in the United States in 2007 and 2008. Subtler risks to consumers include inadequate dosages, fake packaging, and ingredient impurities. The Chinese government is taking preliminary steps to improve regulation of pharmaceutical production. Important measures include updating good manufacturing practices legislation in 2011 and consolidating separate regulatory agencies into the China Food and

Drug Administration (CFDA) in 2013. However, China's ability to regulate its own producers is hampered by bureaucratic infighting between the CFDA and other central government agencies, as well as excessive decentralization of regulatory responsibilities to local governments. The absence of checks and balances in China's authoritarian system also makes it difficult to hold manufacturers and officials accountable.

Congress has passed new bills, such as the Food and Drug Administration Safety and Innovation Act (2012), to enhance the FDA's efforts to monitor drug safety overseas, at the border, and in the U.S. market. Using a computerized algorithm called PREDICT, U.S. drug regulators are better able to quantify the risks of individual shipments. However, U.S. consumers remain at risk. As of October 2014, the FDA had only one part-time and two full-time drug inspectors to police China's vast and fragmented drug industry. A key problem has been securing work visas from the Chinese government for additional U.S. inspectors. The issue was raised by Vice President Joe Biden on his December 2013 trip to China. But as of September 2014 these efforts had not produced any results. Behind the U.S. border, the FDA faces the challenge of implementing track-and-trace technologies and regulating wholesalers at the state level.

China's median age will exceed that of the United States within this decade, and the proportion aged 65 and above will increase to 25 percent by 2040, totaling 300 million. The incidence of diseases such as cancer and diabetes is rising, brought on not only by aging and insufficient preventive care, but also by increasing affluence, urbanization, and pollution. In response, the Chinese government is stepping up efforts to fix the country's troubled healthcare system. In addition to structural reforms, it invested more than \$371 billion into the healthcare sector between 2009 and 2012. And yet, healthcare costs are rising, hospitals are overcrowded, and patient-on-doctor violence is on the increase. The government has focused on expanding public health insurance coverage and raising fixed investment in infrastructure and machines, without addressing low pay in the medical profession or improving coordination between large hospitals and local clinics. Distorted fee schedules incentivize doctors to undersupply basic services and oversupply costly drugs and treatments.

U.S. companies keen to sell goods and services in China's healthcare sector must contend with Beijing's heavy-handed intervention in the healthcare market. Government entities run the largest hospitals and insurers, set prices, and determine which foreign drugs make it onto drug reimbursement lists. Private sector providers operate on an uneven playing field and as a result have done little to improve overall delivery. Onerous clinical trials can delay the marketing of U.S. drugs by up to eight years. Unequal access to reimbursement lists—which are seldom updated—makes some U.S. drugs expensive for Chinese patients. U.S. device makers likewise suffer from a number of regulatory hurdles that impact data protection and competitiveness.

Not least of all, foreign companies are struggling to operate ethically in an authoritarian state plagued by widespread corruption. In September 2014, a secret one-day trial was held in a Chinese

court to adjudicate the case of British drug maker GlaxoSmithKline, which stood accused of funneling money through a local travel agency to pay bribes to doctors in return for prescribing its drugs. GlaxoSmithKline was fined nearly half a billion dollars, the highest fine on record against a foreign company. The court also sentenced the company's British former country manager and four other company managers to prison terms of up to four years.

Conclusions

- China today is the world's largest producer of active pharmaceutical ingredients and inert substances. In a 2010 study of pharmaceutical executives by the consulting firm Axendia, 70 percent of respondents cited China as their top source country for pharmaceutical ingredients. China's rise as a pharmaceuticals exporter has coincided with growing reliance on drug and drug ingredient imports in the United States, which is estimated to be the top importer of China's pharmaceutical raw materials. These trends are worrying because China, by some estimates, is also the world's leading supplier of fake and substandard drugs. Tainted heparin, which contained ingredients sourced from China, claimed at least 81 lives in the United States in 2007–2008. More subtle risks of unsafe drugs include inadequate dosages of active ingredients, impure ingredients, and false packaging.
- Since 2007, the Food and Drug Administration (FDA) has taken important steps to improve drug safety regulation. In China, the FDA is expanding its team of drug inspectors, increasing the frequency of inspections, and working closely with its counterparts at the China Food and Drug Administration. In the United States, Congressional legislation has given the agency more authority to hold companies accountable for their supply chain safety, collect user fees from companies to finance regulatory efforts, seize unsafe products at the border, and track-and-trace products via serial numbers. The agency has also transitioned to an electronic, risk-based surveillance system known as PREDICT.
- There is much work to be done to improve drug safety in the United States. Regulating China's vast drug industry, especially the production of precursor chemicals by semi-legitimate companies, is a severe challenge. China's own drug safety regulation is fragmented and decentralized and lacks civil society monitoring. The FDA's China offices have had trouble securing work visas for new inspectors and conducting unannounced factory inspections.
- Alongside its role as a pharmaceutical producer, China is undergoing an epidemiologic and demographic transition that is fundamentally changing the country's demand for healthcare. Chronic and non-communicable diseases are on the rise, due to an aging population and to a worrying decline in public health, caused by pollution, poor diet, and other factors. A more affluent and urbanized population is seeking better quality care. Some experts estimate China's healthcare spending to increase

from \$357 billion in 2011 to \$1 trillion in 2020, making China the second-largest market after the United States.

- At present, China's healthcare market is ill equipped to meet the rise in demand for care. Relative to wealthier countries, doctors and hospital beds are in short supply. Healthcare spending is only 5 percent of gross domestic product, compared to an average of 9 percent in Organization for Economic Cooperation and Development countries. To remedy this situation, the Chinese government launched ambitious healthcare reforms in 2009 that aim to extend basic government-subsidized health insurance, expand the population health benefit package, strengthen primary care, control the price of essential drugs, and reform government-owned hospitals. Fiscal spending to support these reforms totaled some \$371 billion in 2009–2012.
- Not all of China's healthcare reforms have succeeded, and serious problems remain. Expanded insurance coverage has had some success in reducing rural-urban gaps and out-of-pocket spending. But the insurance coverage of migrant workers is not portable, and coverage is limited for costlier drugs and treatments. The absence of a functioning referral system has led to overcrowding in large hospitals and underutilization of local providers.
- On the supply side, most of China's public funding increases for healthcare have gone toward brick-and-mortar investments and new machines, rather than increases in doctors' salaries. Prices and fees remain subject to government interference, which incentivizes doctors to undersupply basic services and oversupply costly drugs and treatments. The net result is that hospitals are short of qualified staff and rely excessively on drug revenues, while healthcare spending is rising on the back of escalating costs rather than improvements in care. Private sector providers operate on an uneven playing field and have done little to improve overall delivery.
- U.S. companies that market drugs, medical devices, and healthcare services view China as an important opportunity, not only to source cheap inputs, but also to market goods and conduct research and development. An important impetus to focus resources on China is slowing demand and changing regulation in the United States, as well as a lack of other markets that match China in terms of market size and level of development.
- Market access for U.S. drug and device makers remains restricted. Companies are concerned about being targeted by China's recent anticorruption drive and indiscriminate use of its antimonopoly law, which ostensibly aim to lower healthcare costs but serve to disadvantage foreign companies. China's process for approving new drugs leads to excessive data transfers. Loopholes in China's intellectual property laws allow local drug makers to reproduce U.S. patent drugs prematurely. Onerous clinical trials, combined with state interference in tendering, pricing, and reimbursement, cause delays of up to eight

years for state-of-the-art U.S. drugs, and make these drugs prohibitively expensive for ordinary Chinese patients. U.S. device makers are concerned as well about proposed amendments to China's Medical Device Law, published in March 2014. The amendment could impose hundreds of new requirements on foreign device makers, including indigenous standards for serial number tracking.

U.S.-China Clean Energy Cooperation

The United States and China lead in global energy consumption and rely on abundant domestic coal resources to provide energy, which results in high levels of carbon dioxide (CO₂) emissions. China is the world's largest emitter of CO₂, followed by the United States, and their joint efforts are necessary for successful global reduction of emissions. Both countries are investing in renewable resources, such as wind and solar, while at the same time both countries are also working on increasing efficiencies and reducing pollution by making conventional energy sources, such as natural gas and coal, cleaner. At the June 2008 Strategic and Economic Dialogue, the United States and China signed the Ten Year Framework on Energy and Environmental Cooperation, establishing goals for cooperation on clean electricity, clean water, clean air, efficient transportation, and forest conservation. During a November 2009 trip to Beijing, President Obama used this framework as the basis for establishing a number of initiatives to enhance U.S.-China cooperation on clean energy.

The U.S.-China Clean Energy Research Center (CERC) is the most ambitious U.S.-China program for joint research and clean energy development to come out of the November 2009 meeting between President Obama and President Hu. As part of the program, the U.S. Department of Energy awarded grants to research teams led by West Virginia University on clean coal, the University of Michigan on clean vehicles, and Lawrence Berkeley National Laboratory on building energy efficiency. These U.S. teams conduct joint research with Chinese teams led by Huazhong University of Science and Technology on clean coal, Tsinghua University on clean vehicles, and the Ministry of Housing and Urban-Rural Development on building energy efficiency. CERC is funded in equal parts by the United States and China, with each consortium allocating a budget of \$50 million for the first five years (\$25 million provided by the national governments matched by \$25 million from industry, universities, research institutions, and other stakeholders). The nature of CERC's work is collaborative, with several participants (academic, industry, or a combination) working on each project at the same time. As of July 2014, CERC consisted of 75 individual projects within its three consortia, of which 58 were joint efforts.

One of CERC's unique features is its Technology Management Plan (TMP), which was created to address IP concerns associated with joint research and development activities. While the TMP does not add any new IP protections that the law does not otherwise provide, TMP establishes a framework to manage any IP developed under the umbrella of CERC. However, to date, most CERC participants still tend to design collaborative projects only around less

sensitive research topics, and little of the new IP generated through CERC activities has come from collaborative efforts—an indication that China’s history of poor IP protection continues to have a chilling effect on cooperation.

Keen on reducing its reliance on coal, the Chinese government has been investing in nuclear energy and natural gas. However, China lacks knowledge necessary to develop indigenous nuclear technology or to tap its massive reserves of shale gas. Instead, China has sought to acquire the necessary expertise through cooperation with foreign governments and companies. The United States and China are already working together in both governmental and private capacities. However, commercial activities remain the predominant channel for information sharing and technology transfer in the shale gas sector and in the nuclear energy sector. Because U.S. companies are valuable sources of information on fracking technology for Chinese oil companies, Chinese investment in the U.S. shale gas sector has been on the rise. In 2013 alone, China invested \$3.2 billion in the U.S. energy sector. However, the success of Chinese investors in the United States points to a troubling lack of reciprocity: While Chinese companies can freely acquire assets in U.S. oil and natural gas companies, the Chinese government prohibits foreign companies from doing the same, forcing them instead to form partnerships with Chinese entities. The situation is similar when it comes to civil nuclear energy. The United States and China have cooperated for nearly 30 years, although for most of its history, the cooperation has focused primarily on strengthening nuclear safety. More recently, transfer of technology through commercial engagement came to dominate U.S.-China nuclear cooperation. In 2007, U.S.-based Westinghouse (owned by Toshiba Corp.) won the contract to build four AP1000 nuclear reactors in China. The deal included a technology transfer agreement that allowed China’s State Nuclear Power Technology Corp., directly under China’s State Council, to receive over 75,000 documents that relate to the construction of the AP1000 reactors.

To the extent that China’s investment in clean energy leads to reduced emissions of CO₂ and other pollutants, U.S. public and private cooperation with China on development of clean energy has positive outcomes for all nations. China is a global leader in clean energy investment, and Chinese funding could be used to boost technologies that are not cost effective in the short run. China’s lack of strong IP standards and potential for future competition with U.S. renewable energy companies remain primary challenges to closer cooperation. Analysts and policymakers continue to fear that China could reap the benefits of cooperation at the expense of U.S. industry and workers.

Conclusions

- The United States and China share similar challenges in their quest for clean energy. Both countries are leading global emitters of greenhouse gasses and could benefit from cooperation on issues related to climate change and environmental protection.

- The United States and China have been cooperating for over 30 years on environmental and clean energy initiatives, with much of the early agreements focusing more on establishing the basic frameworks for cooperation and on energy policy discussions. In the 2000s, clean energy and climate change mitigation emerged as leading topics of cooperation between China and the United States, culminating in 2009 with the establishment of the Clean Energy Research Center (CERC), a joint research initiative.
- The CERC facilitates joint research and development on clean energy technology by teams of scientists and engineers from the United States and China. Funded in equal parts by the United States and China, CERC has participation from universities, research institutions and industry. CERC's three research priorities (the consortia) are advanced clean coal technologies, clean vehicles, and building energy efficiency.
- While Chinese CERC participants have been filing patents in China and in the United States, to date, there have been no jointly-created intellectual property (IP) and no U.S. inventions patented in China, suggesting that China's history of lax protection of IP dampens enthusiasm for collaboration.
- While collaboration under CERC is research-driven, U.S.-China cooperation on shale gas development is more commercial, largely involving investment by Chinese companies in U.S. shale assets in order to acquire technology and know-how.
- Similar to shale gas, U.S.-China cooperation on civil nuclear energy involves a sale of technology to China, supplemented by nuclear safety, safeguards, and security training to Chinese regulators and technicians to ensure China meets the highest nuclear safety and nonproliferation standards.

Chapter 2: Military and Security Issues Involving China

Year in Review: Security and Foreign Affairs

Although it is still early in his administration, General Secretary Xi appears to have consolidated a high degree of control over China's security and foreign policy-making processes in his first two years in power. His proactive—and sometimes aggressive—approach to security and foreign affairs has been a hallmark of his tenure thus far. In fact, China's Foreign Minister remarked in a high-profile press conference in March 2014 that “‘active’ is the most salient feature” of China's diplomacy under the Xi Administration. President Xi has emphasized “peripheral diplomacy” and in the past year has announced several ambitious projects to link China with its continental and maritime neighbors, including a Silk Road Economic Route across Eurasia, a 21st Century Maritime Silk Road through the Indo-Pacific, and a Bangladesh-China-India-Myanmar Economic Corridor. In addition, the PLA increased its global footprint in 2014, continuing its counterpiracy operations in the Gulf of Aden, conducting humanitarian assistance and disaster relief operations in the aftermath of Typhoon Haiyan in the Philippines, and participating in regional search and rescue oper-

ations following the disappearance of Malaysia Airlines Flight 370. The PLA also participated in more exercises and drills with foreign militaries in 2014 than in any previous year since 2005, and participated for the first time in the U.S.-led multinational Rim of the Pacific exercise.

Beijing's efforts to cultivate positive relations with peripheral countries were overshadowed, however, by its increasingly bold and coercive actions toward its maritime neighbors. Although China's assertive approach to its maritime territorial disputes has been ongoing since approximately 2009, the past year saw several worrying new developments. First, China in late 2013 established an Air Defense Identification Zone over islands and waters in the East China Sea contested by Japan. Not only did this ratchet up already-simmering tensions between Beijing and Tokyo over the dispute, but it led to dangerous air encounters between Chinese and Japanese military aircraft. In May 2014, China sparked widespread protests in Vietnam (and attracted criticism from the international community) when it moved an oil rig into Vietnam's exclusive economic zone.* The rig was accompanied by dozens of Chinese fishing, Coast Guard, and naval vessels, and clashes between these and Vietnamese boats injured dozens of Vietnamese fishermen and sunk a Vietnamese fishing boat. Starting in March 2014, the China Coast Guard began to disrupt access by the Philippines to one of its naval outposts in the South China Sea in an apparent effort to weaken Manila's control over contested parts of the Spratly Islands. And finally, in an effort to augment its own presence in the Spratly Islands, China ramped up land reclamation projects on at least five reefs, several of which now appear to feature robust civilian and military infrastructure including radars, satellite communication equipment, anti-aircraft and naval guns, helipads, docks, and potentially an airstrip.

With a few exceptions, the U.S.-China security relationship deteriorated in 2014 as well. Turmoil in the East and South China Seas was a key driver of this downturn in bilateral relations, not least of all because two of the countries embroiled in territorial disputes with China—Japan and the Philippines—are U.S. treaty allies. In addition, Chinese military aircraft and vessels have on several occasions since late 2013 confronted U.S. military aircraft and ships in East Asia's air and maritime commons. On each of these occasions, Chinese military personnel engaged in unsafe, unprofessional, and aggressive behavior that could have resulted in the loss of life or a major political crisis. China's decision to send an uninvited intelligence collection ship to spy on the U.S.-led Rim of the Pacific exercise also was inappropriate, and undermined the spirit of cooperation and transparency that the exercise sought to cultivate. It is becoming clear that President Xi's government is willing to cause a much higher level of tension in the bilateral rela-

* According to the United Nations Convention on the Law of the Sea, a coastal state is entitled to an exclusive economic zone, a 200-nautical mile zone extending from the coastline of its mainland and from the coastline of any territorial land features. Within this zone, the state enjoys "sovereign rights" for economic exploitation (such as oil and natural gas exploration and exploitation), but not full sovereignty. United Nations Convention on the Law of the Sea, "Article 56: Rights, Jurisdiction, and Duties of the Coastal State in the Exclusive Economic Zone." http://www.un.org/depts/los/convention_agreements/texts/unclos/part5.htm; United Nations Convention on the Law of the Sea, "Article 121: Regime of Islands." http://www.un.org/depts/los/convention_agreements/texts/unclos/part8.htm.

tionship than past administrations have. Unfortunately, China's pursuit of a more confrontational relationship with the United States likely will persist.

Conclusions

- China has been aggressively advancing its security interests in East Asia. This has led to tension, confrontation, and near-crises with its neighbors and the United States and has fueled competition with the United States that increasingly appears to be devolving into a zero-sum rivalry. A central characteristic of this pattern is Beijing's effort to force the United States to choose between abandoning its East Asian allies to appease China and facing potential conflict with Beijing by protecting its allies from China's steady encroachment. China's pattern of behavior is likely to persist.
- China's People's Liberation Army has undertaken provocative, aggressive, and dangerous behavior aimed at the U.S. military in maritime East Asia, which creates the risk of misperception, miscalculation, escalation, and loss of life.
- Having rapidly consolidated power, Chinese President Xi Jinping appears to have achieved a higher degree of control over China's national security and foreign policy than his predecessor and is pursuing a more active role for China in regional and international affairs. President Xi's proposed regional arrangements, the Silk Road Economic Belt, 21st Century Maritime Silk Road, and Bangladesh-China-India-Myanmar Economic Corridor, are designed to project a positive and "responsible" image of China to the region and the world, develop trade routes, and gain access to natural resources. These initiatives, couched in terms of cooperation and friendship, belie China's increasingly strident efforts to intimidate and coerce many of its neighbors.
- China's territorial dispute with Japan remains one of the region's most dangerous flashpoints. China's declaration of an Air Defense Identification Zone over contested waters in the East China Sea in late 2013 ratcheted up tensions with Japan and created an unsafe and unpredictable air environment in the region. On two occasions in 2014, Chinese and Japanese military aircraft activity in China's Air Defense Identification Zone led to close encounters which could have resulted in an accident and loss of life.
- China moved aggressively in asserting its claims in the South China Sea in 2014, using unilateral and destabilizing actions to advance its territorial ambitions. In March, it began attempts to block access to a Philippine military outpost in the South China Sea, Second Thomas Shoal. In May, it moved an oil rig into Vietnam's exclusive economic zone. Throughout the year, it continued work on various land reclamation projects in the South China Sea, including building military facilities on Fiery Cross Reef and potentially Johnson South Reef in the Spratly Islands. China's actions have introduced greater instability to the region and violate China's 2002 agreement with

the Association of Southeast Asian Nations, which stipulates that all claimants should “exercise self-restraint in the conduct of activities that would complicate or escalate disputes and affect peace and stability.”

- China’s People’s Liberation Army participated in more exercises and drills with foreign militaries in 2014 than in any previous year since 2005. In particular, China’s participation in the U.S.-led Rim of the Pacific exercise illustrated the People’s Liberation Army’s intent to increase its participation in regional and global security affairs. However, China’s decision to send an uninvited intelligence collection ship to the exercise seemed to belie its rhetoric of peaceful cooperation with its neighbors.
- Due largely to institutional and training reforms over the last decade, China’s People’s Liberation Army now is able to maintain higher day-to-day readiness rates and conduct longer-range and more frequent, robust, and realistic training. As these reforms continue, the Chinese military gradually will become more proficient and confident operating its advanced weapons, platforms, and systems and conducting large-scale, sophisticated operations.
- China’s naval operations within weapons range of U.S. bases and operating areas in the Indian Ocean region will become more frequent as China expands and modernizes its fleet of submarines and surface combatants. However, the Chinese navy in the near term likely will not seek to develop the ability to establish sea control or sustain combat operations in the Indian Ocean against a modern navy.

China’s Military Modernization

China’s rapid economic growth has enabled it to provide consistent and sizeable increases to the PLA budget to support its military modernization and its gradually expanding missions. China’s announced official projected defense budget increased from RMB 720 billion (approximately \$119.5 billion) in 2013 to RMB 808 billion (approximately \$131.6 billion) in 2014, a 12.2 percent increase. With the exception of 2010, China’s official defense budget has increased in nominal terms by double-digits every year since 1989. China’s actual aggregate defense spending is higher than the officially announced budget due to Beijing’s omission of major defense-related expenditures—such as purchases of advanced weapons, research and development programs, and local government support to the PLA—from its official figures.

In the late 1990s, China’s leaders began to take concrete steps to strengthen the country’s defense industry. Although the PLA has not fully overcome its dependence on foreign suppliers, China since then has increased the size and capacity of several defense sectors in support of the PLA’s equipment modernization plans. In particular, China has made progress in its missile sector and now is able to rapidly develop and produce a diverse array of advanced ballistic and cruise missiles. China maintains the largest and most lethal short-range ballistic missile force in the world; fielded the

world's first antiship ballistic missile in 2010; deployed its military's first long-range, air-launched land-attack cruise missile in 2012; and will widely deploy its military's first indigenous advanced, long-range submarine-launched antiship missile in the next few years, if it has not already. In 2014, China conducted its first test of a new hypersonic missile vehicle, which can conduct kinetic strikes anywhere in the world within minutes to hours, and performed its second flight test of a new road-mobile intercontinental missile that will be able to strike the entire continental United States and could carry up to 10 independently maneuverable warheads.

In the maritime domain, China in 2014 continued its transformation from a coastal force into a technologically-advanced navy capable of projecting power throughout the Asia Pacific. Since the Commission's 2013 Annual Report, the PLA Navy has expanded its presence in the East and South China Seas and for the first time begun combat patrols in the Indian Ocean. Additionally, China's first aircraft carrier in January conducted its first long-distance training deployment. The nature of the deployment suggests China is experimenting with multiple types of carrier formations, including those resembling U.S. combined expeditionary groups.

Regarding China's nuclear forces, high-confidence assessments of the numbers of Chinese nuclear-capable ballistic missiles and nuclear warheads are not possible due to China's lack of transparency about its nuclear program. The Department of Defense (DoD) has not released detailed information on China's nuclear program, only noting in 2013 that "China's nuclear arsenal currently consists of approximately 50–75 intercontinental ballistic missiles," and that "the number of Chinese intercontinental missile nuclear warheads capable of reaching the United States could expand to well over 100 within the next 15 years." DoD has not provided an unclassified estimate of China's nuclear warhead stockpile since 2006, when the Defense Intelligence Agency said China had more than 100 nuclear warheads. Estimates of China's nuclear forces and nuclear capabilities by nongovernmental experts and foreign governments tend to be higher. Despite the uncertainty surrounding China's stockpiles of nuclear missiles and nuclear warheads, it is clear China's nuclear forces over the next three to five years will expand considerably and become more lethal and survivable with the fielding of additional road-mobile nuclear missiles; as many as five nuclear-powered ballistic missile submarines, each of which can carry 12 sea-launched intercontinental-range ballistic missiles; and intercontinental ballistic missiles armed with multiple independently targetable reentry vehicles.

In space, China in 2014 continued to pursue a broad counterspace program to challenge U.S. information superiority in a conflict and disrupt or destroy U.S. satellites if necessary. Beijing also likely calculates its growing space warfare capabilities will enhance its strategic deterrent as well as allow China to coerce the United States and other countries into not interfering with China militarily. Based on the number and diversity of China's existing and developmental counterspace capabilities, China probably will be able to hold at risk U.S. national security satellites in every orbital regime in the next five to ten years.

China's rapid military modernization is altering the military balance of power in the Asia Pacific in ways that could engender destabilizing security competition between other major nearby countries, such as Japan and India, and exacerbate regional hotspots such as Taiwan, the Korean Peninsula, the East China Sea, and the South China Sea. Moreover, China's growing antiaccess/area denial capabilities increasingly will challenge the ability of the United States to deter regional conflicts, defend longtime regional allies and partners, and maintain open and secure access to the air and maritime commons in the Asia Pacific. While the United States currently has the world's most capable navy, its surface firepower is concentrated in aircraft carrier task forces. China is pursuing a missile-centric strategy with the purpose of holding U.S. aircraft carriers at high risk if they operate in China's near seas and thereby hinder their access to those waters in the event of a crisis. Given China's growing navy and the U.S. Navy's planned decline in the size of its fleet, the balance of power and presence in the region is shifting in China's direction. By 2020, China could have as many as 351 submarines and missile-equipped surface ships in the Asia Pacific. By comparison, the U.S. Navy, budget permitting, plans to have 67 submarines and surface ships stationed in or forward deployed to the region in 2020, a modest increase from 50 in 2014. Furthermore, Frank Kendall, undersecretary of defense for acquisition, technology, and logistics, testified to the House Armed Services Committee in January 2014 that concerning "technological superiority, DoD is being challenged in ways that I have not seen for decades, particularly in the Asia Pacific region. . . . Technological superiority is not assured and we cannot be complacent about our posture."

China's rise as a major military power challenges decades of air and naval dominance by the United States in a region in which Washington has substantial economic and security interests.

Conclusions

- As a result of China's comprehensive and rapid military modernization, the regional balance of power between China, on the one hand, and the United States and its allies and associates on the other, is shifting in China's direction.
- China's accelerated military modernization program has been enabled by China's rapid economic growth; reliable and generous increases to the People's Liberation Army's (PLA's) budget; gradual improvements to China's defense industrial base; and China's acquisition and assimilation of foreign technologies—especially from Russia, Europe, and the United States—through both purchase and theft.
- Since 2000, China has significantly upgraded the quality of its air and maritime forces as well as expanded the types of platforms it operates. Together with the fielding of robust command, control, communications, computers, intelligence, surveillance and reconnaissance capabilities, these improvements have increased China's ability to challenge the United States and its allies and partners for air and maritime superiority in the Asia Pacific. China's power projection capability will grow

rapidly between now and 2020 with the addition of up to approximately 60 new submarines and surface ships; China's first carrier-based aviation wing and second aircraft carrier; and 600 new modern combat aircraft, including China's first fifth-generation fighters.

- After over a decade of research, development, and production, many of China's regional strike capabilities have matured. China's ballistic and cruise missiles have the potential to provide the PLA with a decisive military advantage in the event of a regional conflict and are contributing to a growing imbalance in the regional security dynamic. China now is able to threaten U.S. bases and operating areas throughout the Asia Pacific, including those that it previously could not reach with conventional weapons, such as U.S. forces on Guam.
- China's nuclear force will rapidly expand and modernize over the next five years, providing Beijing with a more extensive range of military and foreign policy options and potentially weakening U.S. extended deterrence, particularly with respect to Japan.
- China is becoming one of the world's preeminent space powers after decades of high prioritization and steady investment from Chinese leaders, indigenous research and development, and a significant effort to acquire and assimilate foreign technologies, especially from the United States. Qualitatively, China now produces near-state-of-the-art space systems for certain applications, such as intelligence, surveillance, and reconnaissance satellites to support China's long-range cruise missiles. Quantitatively, China's numerous active programs continue to increase its inventory of satellites and other space assets.
- Based on the number and diversity of China's existing and developmental counterspace capabilities, China likely will be able to hold at risk U.S. national security satellites in every orbital regime in the next five to ten years.
- Fundamental U.S. interests are at stake in the evolving geopolitical situation in East Asia and the Western Pacific. China's rise as a major military power in the Asia Pacific challenges decades of air and naval dominance by the United States in a region in which Washington has substantial economic and security interests.

China's Domestic Stability

Twenty-five years after the Tiananmen Square massacre, many of the underlying causes of unrest persist, leading to hundreds of thousands of localized protests each year. The most common sources of dissatisfaction in China are land seizures and labor disputes. Other social issues that contribute to the rising levels of unrest include unemployment, the urban-rural divide, religious repression, environmental degradation, and corruption. Heightened public awareness combined with the growth of Internet connectivity and social media have helped citizens to organize protests and to air grievances. In response, the Chinese leadership attempts to

suppress and censor most protests to prevent a sudden national movement capable of toppling the CCP. The limited legal channels available for Chinese citizens to seek redress for their grievances, such as petitioning and lawsuits, are mostly ineffective and often serve to encourage further unrest rather than resolve citizen complaints.

Over the past year, ethnic unrest in the Xinjiang Uyghur Autonomous Region has intensified with major attacks against civilians by militant Uyghur separatists. Uyghur militants also have demonstrated their capacity to attack outside Xinjiang. Chinese internal security forces' increasingly harsh response to ethnic unrest and tightened restrictions on Uyghur minorities' political, religious, and cultural expression and freedom of movement have contributed to growing radicalization of disenfranchised Uyghurs within Xinjiang. Such responses have resulted in greater conflict between Uyghurs and the government and Han Chinese.

The Chinese leadership has historically maintained domestic stability by relying on internal security forces and closely monitoring unrest. President Xi has centralized China's stability maintenance apparatus by chairing two new policymaking bodies on domestic security and the Internet. In addition, President Xi has implemented a wide reaching campaign against outspoken dissidents and advocates calling for reform under Chinese law. China's three main internal security forces over the last decade have expanded capabilities, allowing for faster, more robust, and more lethal responses to sudden outbreaks of unrest. The Chinese government's announced public security spending in 2013 was approximately RMB 778.7 billion (about \$127.4 billion), exceeding national defense spending for the fourth year in a row.

China's information controls also have been tightened since President Xi took office, particularly China's censorship of private communications and social media. The Chinese leadership has implemented new regulations on domestic news media and has increased harassment and economic pressure on U.S. and other foreign media to coerce compliance with its information controls. In 2014, President Xi assumed authority of the Internet control apparatus, instituting wide-scale Internet campaigns intended to stifle dissent and crack down on popular Chinese microbloggers and other leaders of public opinion. China's restrictive Internet and media controls are increasingly affecting U.S. companies operating in China, blocking market access and forcing companies to relocate their operations or to self-censor.

Conclusions

- Heightened public awareness, the growth in Internet and social media use, and the lack of satisfactory channels for redress have led to a large number of "mass incidents" each year. Public outrage centers on land seizures, labor disputes, wide-scale corruption, cultural and religious repression, and environmental degradation. Such incidents challenge the legitimacy and competence of the Chinese Communist Party (CCP) and the government at all levels. Local governments have responded to such incidents with a mixture of repression and concessions.

- This year marked an escalation in violence linked to unrest in Xinjiang. Clashes between Uyghurs and police are increasingly ending in bloodshed, including the death of nearly 100 people in late July. In addition, attacks by militant Uyghur separatists are shifting from targeting government officials and buildings to attacking civilians and soft targets such as train stations and public spaces.
- In an effort to address the underlying causes of unrest, President Xi has launched robust anticorruption and counterterrorism campaigns, dedicated resources to address the public's environmental and health concerns, and proposed *hukou* system reforms.
- In response to rising levels of unrest, China's leaders are expanding and improving China's stability maintenance apparatus by streamlining domestic security policymaking, strengthening forces responsible for maintaining internal security, tightening the Party's control over legal institutions, significantly increasing funding for public security, and using information controls to clamp down on dissent.
- With the entire legal apparatus under the CCP's control, local and national officials contain unrest by limiting citizens' access to legal counsel and impartial trials, restricting the ability of citizens to obtain redress for grievances through official channels, and detaining government critics through legal and extra-legal means. Although President Xi has implemented several substantial reforms and hinted at others, the same legal mechanisms to target dissent likely will persist, and meaningful reform will remain elusive.
- President Xi has implemented a campaign not seen in China since the 1970s against individuals expressing dissent. In addition to targeting outspoken dissidents, President Xi has cracked down on popular online commentators. This year's 25th anniversary of the Tiananmen Square massacre marked the harshest crackdown on dissenters yet and the tightest online censorship implemented thus far.
- Although China already has one of the most restricted media environments in the world, since President Xi took office, China has increased censorship of domestic and foreign media. China's information controls directly affect U.S. media companies and journalists with China operations through visa restrictions, cyber attacks, physical harassment, favoritism, and threats. Tightened media controls also affect Chinese citizens who face increasing difficulty accessing information sources that express alternative views from the CCP.
- Beijing likely will take calculated measures to strengthen Internet controls. However, China probably will struggle with the rapid and unpredictable development of Internet-based applications and technologies that could help users defy Beijing's current controls. Furthermore, the increasing number and sophistication of Internet users in China makes Beijing's approach vulnerable to public backlash when authorities restrain

users' access and network performance, especially in sectors where the Internet has become a critical component of economic growth and commerce.

Chapter 3: China and the World

China and Asia's Evolving Security Architecture

Using a variety of foreign and domestic policy tools, Beijing is attempting to expand a sphere of influence in its peripheral regions. Recent public statements by high-level Chinese officials suggest China is departing from its traditional low-profile foreign policy to "hide capacities and bide time." Senior Chinese leaders in the past year have begun to challenge the U.S. position as the primary power in East Asia by promoting a new Asian security architecture led by Asian countries, with China in the leading role. As it seeks to take on a role as a "major responsible country," China's influence in Asia is deepening and the security architecture of Asia is adjusting to this change.

In Northeast Asia, China seeks to thwart the potential for a trilateral U.S.-Japan-South Korea alliance. Published Chinese views on China-Japan security relations encompass a mix of suspicion, alarm, and concern—especially on the issues of Japan's increasingly robust defense and security establishment, the development of the U.S.-Japan alliance, and perceived lack of Japanese atonement over its wartime past. Conversely, official Chinese views on China's relations with South Korea reflect an interest in continued cooperation between Beijing and Seoul on regional security.

Whereas Japan is balancing against China by boosting its own capabilities and reaffirming its alliance with the United States, South Korea appears to be pursuing a hedging strategy by cultivating its security relationships not only with the United States but with China as well. The challenge for Washington as it seeks to modernize its Northeast Asian alliances will be to balance differing sets of security perceptions and priorities in Tokyo and Seoul as well as manage simmering political tensions stemming from their troubled past.

Southeast Asia and Oceania generally share the same wary view of the unfolding U.S.-China competition for regional power and influence. China's central objectives with regard to Southeast Asia are to defend its sovereignty claims and preserve its territorial integrity; to secure and ensure access to resources for continued economic development; and to maintain a secure buffer zone around the Chinese mainland. With Australia, China seeks to maintain strong trade ties while pursuing stronger security relations to at least partially counterbalance the formal and robust U.S.-Australia alliance.

Southeast Asian states and Australia are hedging against what they perceive to be strategic uncertainty in the region by building new security relationships, strengthening existing security relationships, diversifying and strengthening military and paramilitary capabilities, and emphasizing the role of regional institutions and international law to manage disputes. As the United States continues to rebalance to Asia, achieving its security goals in the region will require reassurance and reinforcement of its alliances and

security associates in addition to continued strong engagement with regional political and security institutions.

Conclusions

- Beijing has concluded the U.S.-led East Asia security architecture does not benefit its core interests of regime preservation, economic and social development, and territorial integrity. In 2014, China's leaders began to promote a vision of regional security that marginalizes the United States and "relies on the people in Asia to run Asia's affairs, deal with Asia's problems, and uphold Asia's security"—a vision at odds with the present security architecture encompassing a strong network of U.S. alliances and partnerships in East Asia.
- China is engaged in a sustained and substantial military build-up that is shifting the balance of power in the region, and is using its growing military advantages to support its drive for a dominant sphere of influence in East Asia
- China employs economic incentives and punishments toward its neighbors to support its diplomatic and security goals in East Asia to extract political or security concessions from its Asian neighbors. The market dependencies of many East Asian countries on China—the result of China's deep integration into regional manufacturing supply chains—afford it leverage in pursuing regional security interests.
- China's security relations with Japan are deteriorating over the Senkaku Islands dispute and grievances over Japan's wartime past. Conversely, China's security relations with South Korea are warming as Beijing seeks continued cooperation with Seoul on North Korea. The two Northeast Asian powers differ in their responses to China's assertive security policy in the region: Japan is balancing against China by boosting its own defensive capabilities and its alliance with the United States, while South Korea appears to be pursuing a hedging strategy by maintaining security relations with both the United States and China.
- The current regional security arrangement in Northeast Asia, for which the U.S. alliances with Japan and South Korea provide a basis, will probably remain unchanged in the near term. Differences in security priorities between Japan and South Korea means that without greater political will to overcome these differences, full-fledged trilateral security cooperation among Japan, South Korea, and the United States is unlikely to materialize in the near- to mid-term.
- China's increasingly assertive actions in the South China Sea have led Southeast Asia and Australia to build new defense relationships, deepen existing defense relationships, strengthen military and paramilitary capabilities, and emphasize the role of regional institutions and international law to manage disputes.
- As the United States seeks to reaffirm its alliance with Australia as part of the U.S. rebalance to Asia, China is seeking

stronger security ties with Australia to serve as a counterweight to the alliance. Australia's challenge is to ensure its own economic and security interests in the midst of the ongoing Pacific power shift. Similarly, continued U.S. engagement with ASEAN ensures the political sustainability of U.S. security policy in East Asia, but carries the risk of relying too heavily upon an organization which has yet to define its role in East Asian security.

Recent Developments in China's Relationship with North Korea

Sino-North Korean relations have become increasingly tense since late 2012, and high levels of distrust and frustration now characterize the relationship, particularly on the Chinese side. The downturn in bilateral relations began with North Korea's December 2012 rocket launch, which was a thinly-veiled attempt to test the North's ballistic missile technology. Pyongyang conducted its third nuclear test soon thereafter despite repeated warnings from Beijing. As tensions rose, high-level contacts between North Korean and Chinese officials decreased in 2013 and 2014. One of the clearest indications of turmoil in the relationship was Kim Jong-Un's purge and execution of his powerful uncle, Jang Song-taek, in late 2013. Mr. Jang, who had been Beijing's most important interlocutor in Pyongyang, was accused of crimes of selling "precious underground resources" and "selling off North Korean land" to China. Meanwhile, China and North Korea each are seeking to balance the other by strengthening ties with other countries. China's relations with South Korea have warmed significantly since mid-2013, much to Pyongyang's consternation. For its part, North Korea has sought to diversify its external relations, and has been reaching out to Russia and others.

Pyongyang's provocations have led to a shift in China's perception of North Korea. For example, Beijing has allowed a vibrant public debate on the utility and wisdom of Chinese policy toward North Korea to emerge since Pyongyang's 2013 nuclear test. Further, although China historically has not viewed North Korean denuclearization as an urgent task, Beijing now appears to be genuinely concerned about Pyongyang's accelerating nuclear program. As a result, China has redoubled efforts to restart the long-stalled Six Party Talks between China, Japan, North Korea, Russia, South Korea, and the United States, which were established over a decade ago to negotiate the termination of North Korea's nuclear program. China's efforts to restart the negotiations are intended to "keep them talking and not fighting," but also are motivated by Beijing's desire to exert control over the negotiating process and assert influence over the parties involved. These efforts on the diplomatic front have been accompanied by progress in China's enforcement of United Nations sanctions against North Korea, although significant gaps remain.

China's growing displeasure with North Korea notwithstanding, Beijing continues to support the Kim regime in an effort to encourage continued stability in the North. China fears instability could prompt a political or humanitarian crisis, leading to regime collapse, which could result in a refugee crisis on its border. More concerning to China's leaders, however, is the prospect that a North

Korean collapse could provide a pretext for U.S. military intervention in North Korea. In Beijing's view, a sustained U.S. or U.S.-South Korean allied military presence on the Korean Peninsula is inimical to China's security interests, and China would perceive U.S. troops crossing into North Korea as an urgent deterioration of its already degraded security environment. Unfortunately, China's mistrust of the U.S.-South Korea alliance, its alliance with North Korea, and its unique security priorities vis-à-vis the North prevent it from meaningfully engaging with South Korea and the United States in discussions about North Korean collapse scenarios and contingency planning.

Conclusions

- North Korea has the potential to be one of the most dangerous flashpoints in U.S.-China relations. Although regime collapse or a major humanitarian disaster in North Korea do not appear likely in the near term, such an event could lead to war on the Korean Peninsula, which likely would draw simultaneous military intervention jointly by the United States and South Korea and by China. At the current time, trilateral communication among these countries about their intentions and possible actions in the event of a major contingency in North Korea appears dangerously insufficient to avoid accidents, miscalculation, and conflict.
- Sino-North Korean relations are at their lowest point in decades. This is driven largely by China's frustration over North Korea's destabilizing behaviors since late 2012, including a nuclear test and a high volume of missile tests. Beijing's frustration with Pyongyang notwithstanding, China continues to support North Korea in the interest of stability. China assesses that as long as the North Korean regime remains stable, North Korea will continue to exist as a buffer between itself and U.S.-allied South Korea. Preserving this buffer is the fundamental objective of China's relationship with North Korea.
- China appears to be genuinely concerned about North Korea's nuclear program. This concern is mostly over second-order effects of the North's nuclear advances. For example, China believes North Korea's continued progress on its nuclear program incentivizes the United States to strengthen its military presence and capabilities on the Korean Peninsula. Further, China believes the North's nuclear progress could prompt U.S. allies Japan and South Korea to develop their own nuclear programs. Either of these outcomes would constitute a major deterioration of China's security environment.
- Since 2013, China has redoubled its efforts to restart the Six-Party Talks. Although Beijing is skeptical North Korea will halt its nuclear program as a result of the Six-Party Talks, it values the forum because it ensures China will have a central role in the international community's interaction with North Korea and allows China to exert influence over the parties involved.

- China increasingly views U.S. interests on the Korean Peninsula as inimical to its own. Beijing assumes Washington uses North Korean provocations as a pretext to bolster the U.S. military presence and capabilities on the Korean Peninsula and justify a “rebalance” policy that is actually aimed at containing China.
- China’s relationship with South Korea is significantly improving in both the economic and security realms. Beijing’s efforts to strengthen ties with Seoul reflect China’s frustration with North Korea and are meant in part to signal its disapproval to Pyongyang. China’s pursuit of stronger ties with South Korea also is aimed in part at drawing South Korea away from its alliance with the United States. As its influence over South Korea grows, China judges it eventually will be in a stronger position to pressure South Korea to reduce its security ties with the United States.

Taiwan

Cross-Strait economic ties continue to grow. China is Taiwan’s largest trading partner, largest export market, and largest source of imports. In 2013, annual cross-Strait trade reached \$124.4 billion, a nearly 27 percent increase since 2008. This expansion continued through the first seven months of 2014, growing 4.1 percent when compared with the same period last year. In 2014, China for the first time surpassed Japan to become Taiwan’s largest source of imports. Although China remains the largest destination, Taiwan FDI to China reached a three-year low in 2013 (\$9.2 billion, a 40 percent decline year on year), as labor costs in China rose and slower Chinese demand for Taiwan manufactured goods cut exports. In contrast, Chinese FDI to Taiwan has grown nearly 300 percent from \$94 million in 2010 to \$349 million in 2013 due to the loosening of investment caps and regulations on mainland investment into Taiwan under President Ma Ying-jeou.

However, deepening cross-Strait trade and investment have increased public concerns over Taiwan’s growing dependence on China’s economy and Taiwan’s vulnerability to Chinese economic and political coercion. In 2014, protestors occupied Taiwan’s legislative chamber for 23 days in opposition to the Cross-Strait Services Trade Agreement (CSSTA), which was signed in 2013 but has yet to be ratified by the Taiwan legislature. The grassroots protest movement, later called the Sunflower Movement, ignited a public debate in Taiwan about the agreement, further delayed its ratification, and temporarily postponed negotiations of other cross-Strait agreements. Cross-Strait negotiations have since resumed but it is unclear how successful these negotiations will be given Taiwan citizens’ strong opposition to the CSSTA.

In February 2014, prior to the Sunflower Movement, Taiwan and China reached a milestone in cross-Strait relations by holding the first formal talks between the heads of Taiwan’s Mainland Affairs Council and China’s Taiwan Affairs Office (TAO) since Taiwan and China split in 1949. Later, in June 2014, the director of TAO Zhang Zhijun visited Taiwan, the first visit to Taiwan by a TAO director.

In 2014, the United States raised the visibility of relations with Taiwan by sending U.S. Environmental Protection Agency Administrator Gina McCarthy to Taiwan—the first visit by a U.S. Cabinet-level official since 2000. Annual bilateral trade reached \$57.3 billion in 2013 and continued to grow during the first seven months of 2014, increasing 6 percent over the same period last year. U.S.-Taiwan military-to-military contact also increased in 2013. In 2013, U.S. DoD personnel conducted more than 2,000 visits to Taiwan, compared to approximately 1,500 visits in 2012.

Six years of cross-Strait rapprochement have been beneficial to the United States by temporarily reducing the likelihood of military conflict, enhancing regional stability and development, and allowing U.S. policymakers to address other priorities in the U.S.-China and U.S.-Taiwan relationships. However, improved cross-Strait relations have not resolved the fundamental sovereignty issues between Taiwan and China. China's military modernization continues to focus on improving its ability to conduct military operations against Taiwan and to deter, delay, and deny any U.S. intervention in a cross-Strait conflict. China's military now appears to possess an increasing advantage over Taiwan's military. The increased range and capabilities of China's power projection platforms have largely negated Taiwan's historic geographic advantages in a cross-Strait conflict.

Conclusions

- Under President Ma, cross-Strait economic relations have deepened with the expansion of trade and investment and the signing of numerous economic agreements. However, these agreements face increasing public and political opposition. The Taiwan public's concerns about the effects of cross-Strait economic integration on the country's economy and political autonomy led to a temporary postponement of cross-Strait negotiations and a push for increased oversight of cross-Strait agreements by Taiwan's legislature.
- Prior to the Sunflower Movement, cross-Strait relations reached a milestone with the first formal talks between the heads of Taiwan's Mainland Affairs Council and China's Taiwan Affairs Office in February 2014. After a temporary postponement following the protests, Taiwan and China restarted trade negotiations in September, but the Taiwan legislature will unlikely ratify any new agreements until it agrees on a formal legislative oversight process for cross-Strait agreements.
- U.S.-Taiwan relations took positive but small steps forward this past year with progress in the bilateral Trade and Investment Framework Agreement (TIFA) talks, the first trip to Taiwan by a Cabinet-level official since 2000, and recent growth in bilateral trade. Remaining obstacles to further progress in the TIFA talks are disputes over pork imports, pharmaceutical intellectual property rights, and private-equity investment regulations.
- The United States and Taiwan continue to engage in a robust but low-profile security partnership, including increased mili-

tary-to-military contact in 2013. However, the U.S. government has not authorized a major arms sale to Taiwan since 2011, which allows China to further tip the cross-Strait balance of power in its favor.

- Taiwan has expanded its international engagement in recent years, but China continues to restrict Taiwan's participation in most international organizations. Furthermore, Taiwan's discussions with other countries regarding bilateral free trade agreements have reportedly stalled due to those countries' hesitation over China's opposition and questions about Taiwan's ability to ratify any negotiated free trade agreement following strong public opposition to the Cross-Strait Services Trade Agreement.
- Despite the recent cross-Strait rapprochement, the core sovereignty and security issues between Taiwan and China remain unresolved. China's military modernization has significantly increased Beijing's ability to conduct military operations against Taiwan and to deter, delay, and deny any U.S. intervention in a cross-Strait conflict. Taiwan's recent focus on developing innovative and asymmetric military capabilities and continued acquisition of major conventional platforms and weapon systems from the United States have improved Taiwan's military capabilities. However, the cross-Strait balance of power has shifted decidedly in China's favor.

Hong Kong

In 2014 Hong Kong's government advanced the electoral reform process aimed at implementing universal suffrage for the 2017 chief executive election. However, democracy advocates in Hong Kong sought not only expansion of direct election to all Hong Kong's eligible voters, but also relaxation of restrictive nominating requirements for potential candidates. After Beijing ruled out a nominating process open to public participation, and instead adopted a framework that favors pro-Beijing candidates, protesters initiated an extended occupation of areas around government buildings and the Central business district to pressure the government to accept a fair nominating process.

Currently, to be nominated, a potential chief executive candidate must be supported by no fewer than 150 members (or 12.5 percent) of a 1,200-member election committee, which also elects the chief executive. With strong business and political ties to mainland China, many committee members are local elites seeking to curry favor with government officials and Communist Party members in Beijing. One member of Hong Kong's Legislative Council estimated that nearly 80 percent of election committee members are controlled by Beijing.

On August 31, 2014, China's National People's Congress (NPC) issued a decision allowing all registered voters to participate in the next chief executive election, but proposed a nominating mechanism that may prevent candidates who are not pro-Beijing from standing for election. According to the NPC, only two or three candidates may be nominated to stand for election, each of whom must be supported by more than 50 percent of the nominating com-

mittee, which will be modeled on the current election committee and is expected to maintain the same pro-Beijing bias. Moreover, the chief executive candidate must be a “patriot” who will not oppose CCP dictates or one-party rule.

In a strongly-worded paper on the implementation of the “one country, two systems” policy, issued on June 10, 2014, China’s State Council Information Office reasserted China’s control over the “high degree of autonomy” granted to Hong Kong upon its handover and enshrined in the Basic Law.* The paper required all Hong Kong’s administrators, including members of its independent judiciary, to be “patriotic” and “love the country” (i.e., the People’s Republic of China). The paper also warned of foreign forces acting in collusion with groups within Hong Kong to promote democracy in order to thwart China’s unity.

China’s interference in and control over Hong Kong’s political developments incited a large-scale public backlash from democracy activists and student protesters. The Occupy Central campaign, which was organized in 2013 to lobby the central government for true democratic electoral reform, conducted an unofficial referendum on electoral reform which showed that 90 percent of voters wanted the Legislative Council (LegCo), Hong Kong’s legislature, to veto any government proposal that does not allow for genuine fair nomination of chief executive candidates. While all 27 pro-democracy LegCo members (of 70 total members) vowed to veto a final electoral reform proposal that is based on Beijing’s framework, if the proposal was successfully vetoed, the 2017 election would follow the same procedures as in 2012.

China’s military activity in Hong Kong also increased in 2014. In February, the Hong Kong government advanced the construction of a Chinese military port along the waterfront of Victoria Harbor. The PLA administers Hong Kong’s defense through its Hong Kong garrison, and maintains 19 military sites there. The garrison is obligated by law to reveal the location of military sites that restrict public access; however, one undisclosed restricted access military zone containing a radar station was discovered in July 2014. One LegCo member supported conducting a judicial review of this concealment. Displays of new weaponry and anti-riot gear by the military garrison worried democracy protesters that peaceful demonstrations may be met with military force.

Hong Kong’s global press freedom ranking slipped from 35th in 2013 to 37th in 2014, continuing a downward trend dating back to 2004, according to Freedom House. One blow to press freedom occurred when Kevin Lau, then-editor of independent newspaper *Ming Pao*, which often featured content critical of the Chinese government, was removed from his position without explanation and subsequently brutally attacked by knife-wielding assailants. Many members of Hong Kong’s media community believed the attack was

*The “one country, two systems” framework is a policy measure adopted by China following the establishment of Hong Kong and Macau as special administrative regions. The system grants Hong Kong and Macau the right to self govern their economy and political system to a certain extent, excluding foreign affairs and defense. China’s policies concerning Hong Kong are outlined in the 1984 Sino-British Joint Declaration, a legally binding international treaty that dictated the terms of Hong Kong’s handover from the United Kingdom in 1997. In the Joint Declaration, China granted Hong Kong a “high degree of autonomy,” and promised that “Hong Kong will retain its current lifestyle and legal, social, and economic systems until at least the year 2047.”

politically motivated. In another instance, due to pressure from the central government's liaison office in Hong Kong, major international companies dropped advertisements in prominent independent news outlet Next Media, owned by outspoken pro-democracy advocate Jimmy Lai.

Conclusions

- China's central government has put forth a framework for the election of Hong Kong's next chief executive in 2017 that effectively excludes democratic candidates from nomination and allows Beijing to control the outcome. This proposal conflicts with standards set forth in Hong Kong's Basic Law and the International Convention on Civil and Political Rights, and runs counter to international commitments made by China in the 1984 Sino-UK Joint Declaration to preserve Hong Kong's "high degree of autonomy" and way of life for 50 years following its 1997 handover from the United Kingdom.
- Increased Chinese military activity in Hong Kong signals China's determined presence there and serves to intimidate pro-democracy activists from participating in the Occupy Central movement and other peaceful movements out of fear of military retaliation.
- Increased infringement on Hong Kong's press freedom, particularly in the forms of violence against journalists and political pressure on advertisers, threatens the media's ability to serve as a watchdog. The steady erosion of press freedom is a worrying trend that has worsened over the last ten years, and appears to be targeted at outspoken pro-democracy media.

THE COMMISSION'S KEY RECOMMENDATIONS

The Commission believes that ten of its 48 recommendations to Congress are of particular significance. The complete list of recommendations appears at the Report's conclusion on page 549.

The Commission recommends:

- Congress consider legislation that would make available a remedy to domestic firms that have been injured from the anti-competitive actions (such as access to low-cost or no-cost capital) of foreign state-owned companies for the injury that has been inflicted and allow for the potential award of treble damages.
- Congress fund the U.S. Navy's shipbuilding and operational efforts to increase its presence in the Asia Pacific to at least 67 ships and rebalance homeports to 60 percent in the region by 2020 so that the United States will have the capacity to maintain readiness and presence in the Asia Pacific, offset China's growing military capabilities, and surge naval assets in the event of a contingency.
- Congress appoint an outside panel of experts to do a net assessment of the Sino-American military balance and make rec-

ommendations to Congress regarding the adequacy of the current U.S. military plans and budgets to meet the security requirements of the United States in the Pacific.

- Congress require the Department of the Treasury to include in its semiannual report to Congress specific information on the beneficial economic impact of China moving to a freely floating currency in terms of U.S. exports, economic growth, and job creation. In addition, Congress should urge the Administration to begin immediate consultations at the G-7 to identify a multilateral approach to addressing China's currency manipulation.
- Congress direct the Government Accountability Office to update its report on the effectiveness of the U.S.-China Joint Commission on Commerce and Trade and the Strategic and Economic Dialogue. The updated report should include an assessment of the objectives sought by the United States in these talks and whether China has honored its commitments to date.
- Congress consider amending existing trade enforcement rules to ensure that foreign investment in the United States cannot be used to impede the ability of domestic producers to bring petitions for trade enforcement actions. Congress could direct the Department of Commerce to update its regulations and procedures for antidumping and countervailing duty cases to create a rebuttable presumption that firms that are state-owned, state-controlled, or state-invested with facilities in the United States are operating at the direction of the state. Those state-directed companies would then be excluded from calculations of industry support or opposition unless they can prove that there is no such involvement or direction.
- Congress request that the Office of the United States Trade Representative, Department of Commerce, and International Trade Commission report to Congress on the extent to which existing authorities would allow for sanctions to be imposed against entities that benefit from trade secrets or other information obtained through cyber intrusions or other illegal means and were provided by a national government, foreign intelligence service, or other entity utilizing such means. If authorities do not exist, they should provide a proposal to address such problems.
- Congress pursue measures to improve the government's information about drug ingredient and dietary supplement producers, especially for imports. To this end, Congress should urge the Food and Drug Administration (FDA) to work with its Chinese counterparts to establish a more comprehensive regulatory regime for registering China-based active pharmaceutical ingredient producers, and make this producer information available on demand for U.S. agencies.
- Congress adopt a resolution urging China to keep its commitments to allow broadly representative nomination and election of Hong Kong's chief executive by universal suffrage in accordance with democratic procedures as articulated in the 1984

Sino-British Joint Declaration on the Question of Hong Kong, the Basic Law of the Hong Kong Special Administrative Region, and the International Covenant on Civil and Political Rights.

- Congress urge the FDA to insist on expedited approvals from the Chinese government for work visas for the FDA staff, and on expanded authority to conduct unannounced visits at drug manufacturing facilities in China.

INTRODUCTION

This past year, the new Chinese leadership sought to consolidate political power and keep the economy expanding at a predictable pace even if it meant shelving many of the reforms it embraced in the National People's Congress. Party leaders placed their highest priority on maintaining public support through rapid economic growth and job creation. The Party set as a goal an annual gross domestic product growth rate of 7.5 percent, and toward the end of the year, appeared to be on track to meeting that objective. While Chinese Communist Party General Secretary Xi Jinping moved more cautiously than anticipated on the economic restructuring approved by the top Party leadership in March, he acted quickly on some fronts, particularly in removing from power his political opponents as well as those opposed to his reform agenda. General Secretary Xi surprised most observers with his widely publicized campaign for fighting corruption among government and Party officials. Despite expectations some had for change, China's formula of authoritarian one-party rule and state-directed capitalism prevailed. By most accounts, Xi positioned himself to be the most powerful Party and government leader in two decades as he took direct command of the military and a strengthened internal security apparatus while installing longtime loyalists in key economic policy positions.

Although China's leaders promised to restructure its economy to one based on domestic consumption rather than fixed investment and exports, in 2014 they continued their traditional ways—borrowing heavily to stimulate the economy by building infrastructure, such as railways, highways, and oil and gas distribution systems. Rather than moving forward with the broad reform agenda proposed by General Secretary Xi when he first took office a year ago—by allowing market forces and financial liberalization to play a “decisive role” in the economy—the government continued to subsidize favored industries and maintain an artificially low value of the renminbi in order to boost exports and inhibit imports. The predictable result: Chinese government spending rose 25 percent in the first half of 2014 while the value of the renminbi tumbled and exports to the United States continued to grow. Meanwhile, the trade imbalance headed toward another record figure for 2014, likely surpassing last year's record \$318.7 billion U.S. trade deficit in goods with China.

Structural problems in China's economy persist, to the continuing detriment of China's trading partners and its own citizens. Chinese government-directed excess capacity in industries such as steel, cement, glass, construction, solar panels, and shipbuilding has unfairly harmed international competitors. The lack of opportunity for Chinese citizens to safely and productively invest their savings in the state-owned banking system or the underdeveloped

stock and bond markets or with foreign financial firms has driven China's citizens to speculate in the volatile real estate sector. State-owned banks—the primary source of commercial finance—continue to favor Chinese government-owned companies rather than private companies or entrepreneurs. Promises to provide banking customers with deposit insurance and floating interest rates remain unfulfilled.

During the course of 2014, foreign companies investing in China faced increased regulatory burdens and barriers to business dealings that do not similarly encumber China's highly favored "national champions." China's anti-monopoly laws, in particular, appear to be focused on disadvantaging foreign invested companies rather than being applied equitably.

For the first time, in 2014, foreign direct investment (FDI) from China into the United States exceeded FDI from the United States to China. While this may spur job growth in the United States, investment by Chinese state-owned or state-controlled companies in the United States risks creating a hybrid economy where privately owned U.S.-based business must compete with Chinese state-financed companies motivated more by Beijing's policy directives than profit. Moreover, there are potential national security concerns associated with investments by Chinese state-owned or state-controlled companies in U.S. critical infrastructure.

China's cyber espionage continued unabated in 2014, despite a concerted U.S. effort since 2013 to expose and stigmatize Chinese economic espionage. In May, the U.S. Justice Department charged five Chinese military officers with cyber-theft from five U.S.-based corporations and a major international labor union. China responded to the allegations by suspending its participation in a bilateral dialogue on cyber security and by retaliating against U.S. based computer software and hardware firms. China's material incentives for continuing this activity are immense and unlikely to be altered by small-scale U.S. actions.

As expected, the 25th anniversary of the Tiananmen Square massacre was noted by Chinese dissidents and by sympathizers in Hong Kong. But it received scant attention by the Chinese government-controlled media and provoked an early crackdown on Chinese political activists in an attempt to muzzle opposition. Amid the pronouncements of coming economic, educational and social improvements, the promise of political reform was notably absent. The central government in Beijing has continued to stifle dissent through use of internal security forces, legal and extralegal measures, and media censorship. Disputes over working conditions and pay in factories, as well as farmland seizures by local and provincial governments and the subsequent sale to business interests, continue to be a source of injustice and protest.

Nevertheless, 2014 was marked by some positive developments. China's government has followed through on its promise to extend better health care and health insurance, particularly to the underserved rural population, although rural-urban inequities persist. The leadership also took the first steps to lift China's onerous residency permit system that discriminates against China's 200 million migrant workers and their families. Leaders began to implement plans for a free trade zone in Shanghai that might provide greater

access to foreign financial services and health care companies. However, many key issues remain unresolved. Market access for U.S. providers of health care goods and services remains restricted. Furthermore, increased spending has not stemmed rising costs and poor delivery in the health care sector, and drug safety remains a pressing concern for Chinese patients, as well as for U.S. patients who consume the drugs and drug ingredients that China exports.

During 2014, China's military modernization continued at a fast pace, creating additional challenges for the United States and its allies, and China's neighbors. Most notably, China conducted its first test of a new hypersonic missile vehicle, which could enable China to conduct kinetic strikes anywhere in the world within minutes to hours, and performed its second flight test of a new road-mobile intercontinental missile that will be able to strike the entire continental United States and could carry up to 10 independently maneuverable warheads. Meanwhile, the People's Liberation Army (PLA) increased its inventory of modern submarines, surface ships, and combat aircraft while upgrading its legacy platforms with new weapon systems.

In the maritime domain, the PLA Navy continued its transformation from a coastal force into a technologically advanced navy capable of projecting power throughout the Asia Pacific. Since the Commission's 2013 Annual Report, the PLA Navy has expanded its presence in the East and South China Seas and for the first time begun combat patrols in the Indian Ocean. Additionally, China's first aircraft carrier in January conducted its first long-distance training deployment. The nature of the deployment suggests China is experimenting with multiple types of carrier formations, including those resembling U.S. combined expeditionary groups.

China's growing confidence in its military capabilities has emboldened Beijing to aggressively advance its territorial ambitions. Since approximately 2009, China has increasingly used coercive military and economic measures to assert control over its territorial claims in the East and South China Seas. Since late 2013, however, China has been more willing to advance its sovereignty claims without seeking to justify its actions as responses to perceived provocations by rival claimants. The three most significant manifestations of this new, even more assertive turn are China's establishment of an Air Defense Identification Zone in the East China Sea; China's relocation of an oil rig to waters disputed by Vietnam in the South China Sea; and China's ongoing attempts to prevent the Philippines from resupplying its military outpost at Second Thomas Shoal in the South China Sea.

China in 2014 continued construction work on various land reclamation projects in disputed waters of the South China Sea. In addition to dredging sand to create islands where there previously were none, China appears to be expanding and upgrading military and civilian infrastructure—including radars, satellite communication equipment, anti-aircraft and naval guns, helipads, and docks—on some of the islands.

Perhaps of most concern is Beijing's apparent willingness to provoke incidents at sea and in the air that could lead to a major conflict as China's maritime and air forces expand their operations beyond China's immediate periphery. China already has initiated

dangerous encounters at sea on several occasions. In December 2013, a U.S. Navy ship was forced to maneuver to avoid a collision with a PLA Navy ship that had intentionally stopped in front of it. Both ships were operating in international waters. Later in 2014, a China Coast Guard ship rammed Vietnamese government ships following China's placement of a state-owned deep-sea drilling platform inside Vietnam's exclusive economic zone, and a Chinese fighter flew within 30 feet of a U.S. Navy reconnaissance aircraft in international airspace.

This pattern of unilateral Chinese actions in sensitive and disputed areas is raising tensions in the Asia Pacific and alienating many of its neighbors. China's deepening economic, diplomatic, and military influence on its geographic periphery has led its neighboring countries to reconsider their security strategies and relationships, particularly those involving the United States. As the United States seeks to reaffirm its alliances and boost its security links with associates in East Asia and Oceania, it must contend with China's competing vision of a China-led regional security architecture. This uncertain environment is further complicated by China's support for North Korea, which continues to pose the most dangerous threat to East Asian security.

Across the Taiwan Strait, Beijing continued its efforts to promote eventual unification by increasing Taiwan's economic interdependence with the mainland while expanding its ability to project military power across the Strait. Some of China's efforts met opposition, however, when more than 100,000 Taiwan citizens protested the proposed ratification of the Cross-Strait Service Trade Agreement. The protests, which came to be known as the Sunflower Movement, illustrated the growing unease in Taiwan over economic interdependence. Concerns over China's creeping influence were not limited to Taiwan, however. Hong Kong's Occupy Central and student protest movements were motivated by China's efforts to control the nomination process for the election of the chief executive. Developments there were closely monitored by Taiwan, which China has suggested might someday wish to join Hong Kong and Macau as another Special Administrative Region.

The United States has fundamental interests at stake in the evolving geopolitical situation in East Asia and the Western Pacific. China's rise as a major military power in the Asia Pacific challenges decades of air and naval dominance by the United States in a region in which the United States has substantial economic and security interests. However, as a result of China's comprehensive and rapid military modernization, the regional balance of power between China, on the one hand, and the United States and its allies and associates on the other, is shifting in China's direction.

The Commission's 2014 Annual Report examines these and other issues as part of its mandate from Congress to monitor the evolving economic and security relationship between our two countries.

CHAPTER 1

U.S.-CHINA TRADE AND ECONOMIC RELATIONS

SECTION 1: YEAR IN REVIEW: ECONOMICS AND TRADE

Introduction

Supported by government stimulus, China sustained economic growth at or near its official target rate of 7.5 percent through the first three quarters of 2014. China's gross domestic product (GDP) growth has been under 8 percent for ten consecutive quarters, with Chinese government leaders calling current growth rates the "new normal" for China.¹ Responding to signs of an imminent economic slowdown, China's government used various policy tools to intervene in the economy and try to achieve its official growth target for 2014.² Branded as a "mini-stimulus," fiscal spending increased by 25 percent year-on-year in May as the government accelerated subsidization of large infrastructure and housing projects.³ A continuing policy of Chinese government intervention in international currency markets supported China's exports in the first half of the year by maintaining an undervalued renminbi (RMB).

Chinese President Xi Jinping laid out a sweeping economic reform agenda during the 2013 Third Plenum of the Chinese Communist Party (CCP) to address many of China's underlying economic problems. Xi's proposed reforms range from a revised tax system, to financial liberalization, to partial reform of restrictions on imports and inbound foreign investment.* However, President Xi's government made minimal progress in implementing these reforms in 2014. Instead, President Xi and his leadership team focused on a broad anticorruption campaign while using the stimulus to avoid further economic slowdown. It remains unclear if the Xi-led government will accelerate reform in 2015.

Although China prevented further deceleration of growth in 2014 through stimulus, the government failed to address underlying structural problems, such as oversupply, overcapacity, mounting local government debt, and asset bubbles that put its economy at

*China has traditionally used catalogs to denote which products, services, and investments are approved for market access. Sectors not specifically listed in the catalogs are restricted from foreign competition. The system more widely used globally is a "negative list" approach which denotes only those sectors which face market access restrictions; sectors not listed are considered open.

risk of a sharp slowdown or “hard landing.”* Excessive levels of investment in property and heavy industries such as steel, which fueled China’s growth since the 1990s, have caused these underlying structural problems. Although market forces have been forcing prices downward, China’s government continues to use subsidized fixed investment and exports to bolster its economy to levels of growth that ensure low unemployment and reduce the risk of social unrest. While disposable income and consumption have increased relative to savings, China has not yet weaned itself from its traditional investment and export-based growth model, and thus continues to struggle with large internal imbalances.⁴

Imbalances in China’s trade and investment relationship with the United States and other countries worsened in 2014. In the first eight months of 2014, the U.S.-China trade deficit increased by 4.1 percent year-on-year to a total of \$216 billion. Despite its economic slowdown, China’s exports continued to grow and it sustained a global trade surplus. Chinese direct investment into the United States exceeded U.S. investment into China in 2014 for the first time as foreign firms faced an increasingly hostile investment climate in China. China accelerated its 2001 “Go Out” policy, which encourages Chinese firms to expand their global presence.⁵ China’s nontransparent policy-making processes frustrated trading partners and obstructed progress in key trade negotiations, such as the Information Technology Agreement (ITA). China’s confrontational behavior in addressing contentious territorial disputes with neighboring countries has also harmed economic and trade relations in the Asia Pacific. Such behavior has economic implications for the United States because of the large volumes of U.S. trade that flow through these disputed waters as well as the presence of potentially vast natural resources, including oil, natural gas, and other mineral deposits.

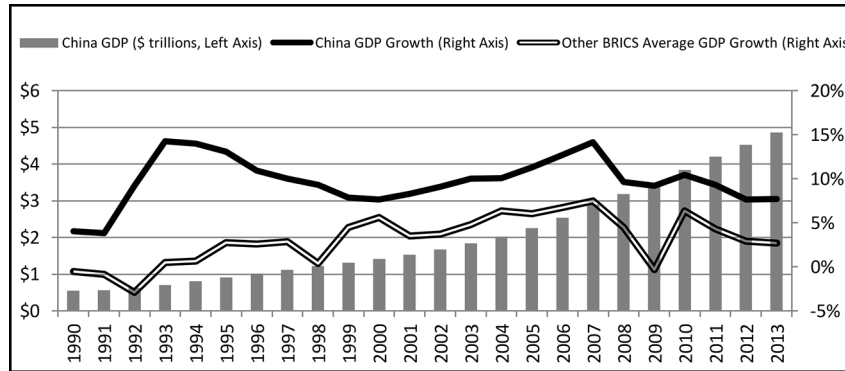
China’s Economic Slowdown and Stimulus

Slowdown—Causes and Symptoms

In the first three quarters of 2014, China reported an average growth rate of 7.4 percent, just below its official growth target of 7.5 percent, as the economy was bolstered through government stimulus. Throughout 2014, Chinese government leaders said lower growth rates would become the norm as the country seeks to transition from an investment and export-led economy to a consumption-based growth model. For example, Chinese Premier Li Keqiang said that China’s economy must grow at a “proper rate” expected at around 7.5 percent, which he described as “slower than the past, but normal.” Li indicated that the Chinese government was “adjusting its economic operations” to ensure that growth did not fall below 7.5 percent, a rate determined to maintain job creation.⁶ Li also pledged that there would be “no hard landing” for China’s economy.⁷ In summation, China conceded to a slower growth rate in 2014 but ensured intervention through stimulus whenever growth decelerated below the official target rate of 7.5 percent.

*A hard landing is a scenario in which an economy slows sharply toward or into recession after a period of growth.

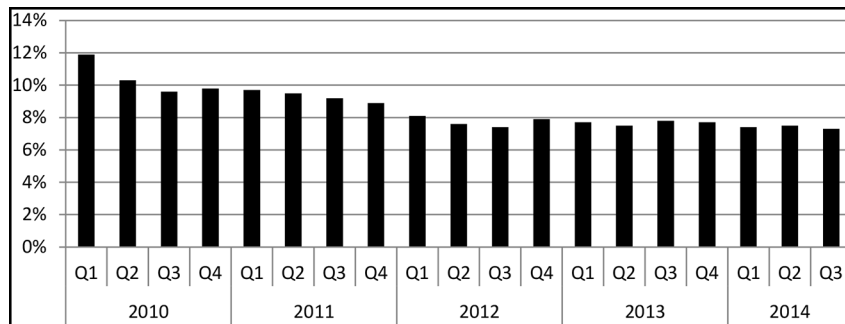
Figure 1: China's Annual GDP and GDP Growth



Source: World Bank Development Indicators. "Other BRICS Average GDP Growth" is an average of the GDP growth rates of Brazil, Russia, India, and South Africa.

Figure 1 shows China's annual GDP and GDP growth rates since 1990. Over this 23-year period, China's annual GDP increased from \$200 billion to \$4.8 trillion. Although annual growth rates declined somewhat from the peaks of the 1990s and early 2000s, they continue to remain consistently high, even in comparison to other large emerging economies. As shown in Figure 2, quarterly GDP growth rates declined slightly in 2010 and 2011, but have generally hovered in the 7.4 to 8 percent range since 2012. In the absence of sustained government stimulus, economists generally agree that China's GDP growth would have continued to decelerate below its official target in 2014.⁸

Figure 2: China's Quarterly GDP Growth Rates

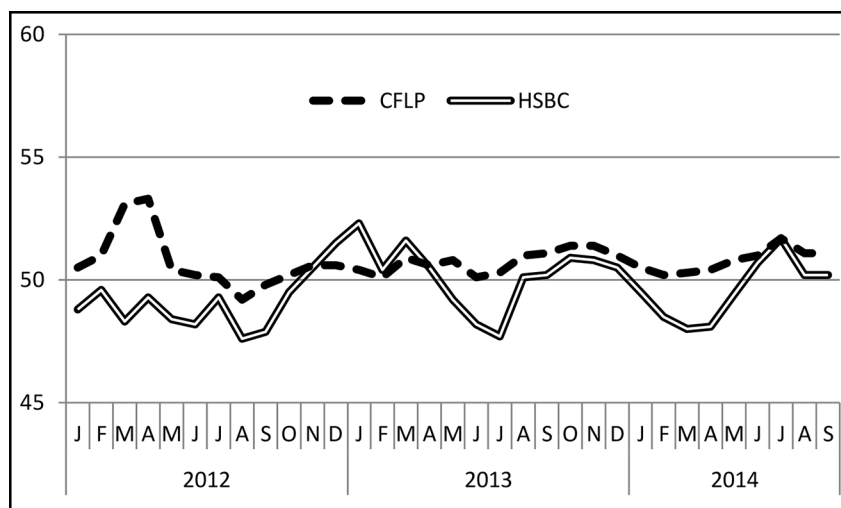


Source: Trading Economics.

China's Purchasing Managers' Index (PMI), an indicator of economic expansion and a proxy for industrial utilization, reveals how expanding government stimulus in 2014 may have mitigated China's economic slowdown. As shown in Figure 3, in the first half of the year, China's PMI remained under 50, the threshold for contraction in the economy. However, by June, as China's stimulus began to expand and take effect, China's PMI rose above 50, indicating evidence of increased production.⁹

Figure 3: Purchasing Managers' Index

(>50 = expansion; <50 = contraction)



Source: China Federation of Logistics and Purchasing (CFLP), via CEIC data; HSBC.

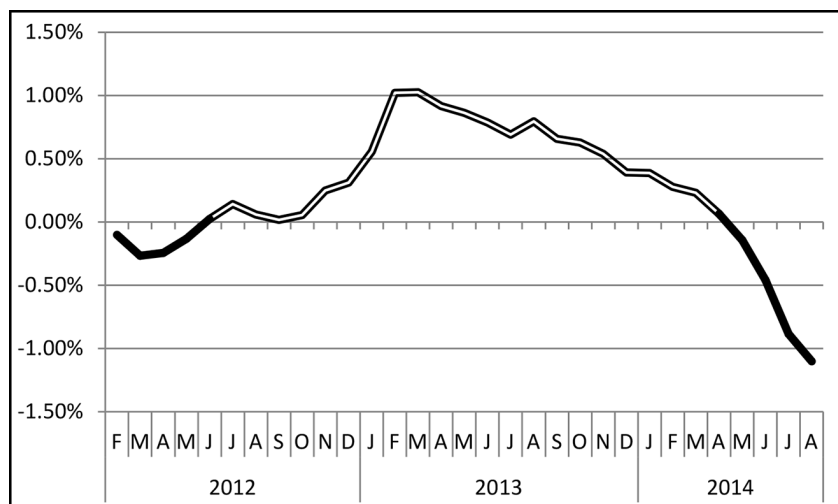
Although China's economy avoided a "hard landing" in 2014, several underlying structural problems combined to jeopardize growth: a worsening property market, persistent industrial overcapacity, and increasing debt levels. According to the International Monetary Fund (IMF), China's "growth has relied too heavily on investment and credit, a pattern that is not sustainable and [is] resulting in rising vulnerabilities."¹⁰ High levels of investment, especially in the property sector and related heavy industries, have been a central driver of economic growth and job creation in China since the 1990s.¹¹ Real estate and construction make up about 14 percent of urban employment in China, and local governments have financed construction-intensive projects as an easy means of job creation.¹² As slowing growth threatens to raise unemployment in China, local governments may continue to subsidize these industries to sustain employment levels and prevent the risk of domestic instability.

Historically, China's dynamic property sector has bolstered demand for steel, cement, and construction—the same industries that now face the most severe overcapacity problems. Such investment in traditional industries has often been spurred indirectly through local government subsidization of infrastructure projects that increased China's debt to the highest levels ever. Thus, the interdependence of China's property market, subsidized overcapacity of traditional industries, and rising local government debt has resulted in a vicious cycle that continues to put China's economy at risk of further slowdown.

Property Slump: In 2014, China's residential property prices fell for the first time in two years, sparking fears of an imminent crisis. As shown in Figure 4, price increases of newly constructed residential properties in 70 Chinese cities began to slow in March 2013 and continued to decelerate throughout that year.¹³ In May 2014,

prices began to decline and continued to do so into the third quarter. In July, 64 of 70 cities surveyed in China reported declining property prices, the largest proportion of cities showing a monthly decline since 2005. On average, property prices fell 0.9 percent between June and July.¹⁴

Figure 4: Change in Price of New Residential Construction
(Average of 70 Surveyed Chinese Cities)



Source: China National Bureau of Statistics, via CEIC data.

According to UBS Bank, “the risk of a more persistent and sharper downturn in the property sector is now the biggest risk facing China’s economy in 2014 and 2015.”¹⁵ As a pillar of China’s growth, the property sector affects a multitude of other key sectors, such as construction and steel production. Moody’s Analytics estimates that, including construction and home renovation, property sales account for nearly one-quarter of China’s GDP.¹⁶

Overcapacity: China’s chronic problem of overcapacity and excess investment continued to plague the economy. Chinese policymakers have been trying to pare down industrial overcapacity since 2005; yet after nearly a decade of efforts, economists believe that the problem has actually worsened.¹⁷ Traditionally, China’s overcapacity has been concentrated in certain sectors, such as steel, solar panels (photovoltaics), plate glass, cement, construction, and shipbuilding.¹⁸ Official data indicate that the average industrial utilization rate was 78 percent in the first half of 2013, while steel and plate glass had the lowest utilization rates at 72 percent, a level that would be considered recessionary in a capitalist system.*¹⁹ In the aluminum sector, overcapacity has increased with

*The utilization rate is a measurement of industrial capacity and is the rate at which the potential output levels are being met or used. Normal utilization rates in the United States tend to average around 80 percent.

approximately three million tons of new smelter space established since 2013.²⁰

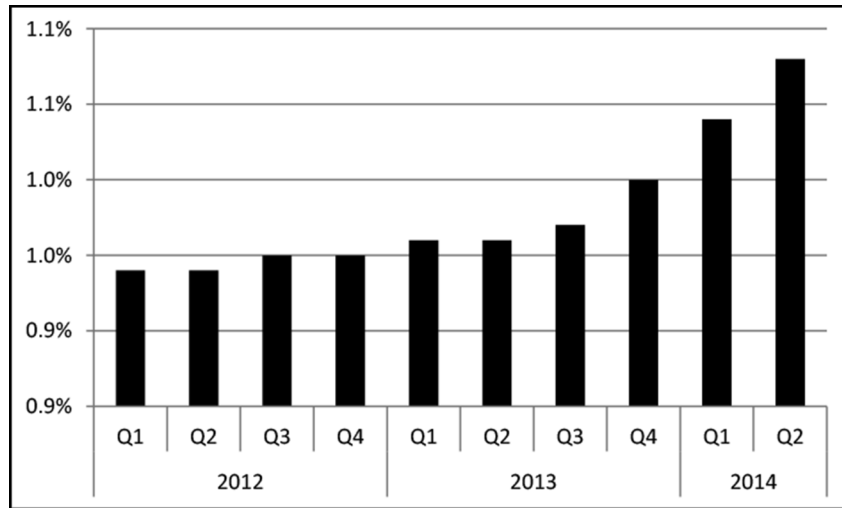
China's steel sector also suffers from serious overcapacity.²¹ Local governments amplify this problem by relying on steel mill expansion as an easy way to increase local output and employment.²² Chinese government subsidization of steel, even when domestic demand is low, has resulted in the selling of Chinese steel exports in global markets at below-market rates. As a result, the U.S. Commerce Department announced in July a preliminary decision to impose countervailing duties on certain Chinese steel imports; a final decision will be announced in November.²³

Economists estimate that for China to meet its 2014 target growth rate without enhanced stimulus, it would have to reduce excess capacity by 56.3 percent in steel, 38.9 percent in plate glass, and 11.4 percent in cement.²⁴ Although necessary in the long-term to reduce inefficiencies, the Chinese government appears to have adopted the view that reducing overcapacity during a time of economic slowdown would exacerbate the decline. For example, China's Minister of Industry and Information Technology, Miao Wei—who is charged with reducing industrial overcapacity—admitted to the difficulty of addressing the problem while the economy is under downward pressure.²⁵ The government did request that banks not lend to industries suffering from overcapacity; however, easy access to credit through the shadow banking sector has negated any effect from the official but widely ignored policy.²⁶

Rising Debt Levels: In 2014, China's debt levels rose at record rates, imposing another underlying threat to China's economic stability. Standard Chartered estimated that China's total debt-to-GDP ratio surpassed 250 percent in 2014,²⁷ a level well above most emerging economies and on par with Australia, South Korea, France, and Italy.* By comparison, the U.S. total debt-to-GDP ratio in 2013 was estimated at 270 percent. While economists do not consider the ratio itself to be dangerously high, they are concerned about the rate at which China's debt levels are increasing. By July 2014, China's debt-to-GDP ratio had already increased 20 percent over the previous year.²⁸ In the first half of 2014, China's total social financing, a more robust measurement of credit beyond traditional bank lending, increased 23.7 percent year-on-year.²⁹ China's rising debt levels are accompanied by a growing number and value of non-performing loans (NPL), which are loans upon which the borrower has not made payments for at least 90 days.³⁰ NPLs in China have been rapidly rising since late 2013, as shown in Figure 5. In addition, in 2014, China experienced its first corporate bond default since the establishment of its bond market in the early 1990s.³¹ If this trend continues, it could have negative consequences on the financial sector, as well as the broader economy.³²

* Standard Chartered's estimate of total debt is more comprehensive than China's official debt statistics and includes both domestic and foreign lending, as well as some types of lending that are often referred to as shadow banking. These include trust loans and entrusted loans, but do not include lending by underground banks, guarantee companies, online lending firms, and pawn brokers, which Standard Chartered considers to be very small compared to overall credit estimates. Some analysts estimate these forms of lending not included in Standard Chartered's calculation to be as high as 8 percent, in which case China's total debt-to-GDP ratio would be about 258 percent.

Figure 5: Chinese Non-Performing Loans
(as percentage of commercial bank loans)



Source: China Banking Regulatory Commission, via CEIC database.

Local governments are a major contributor to China's rising debt levels. Excessive investment in China's property sector and overcapacity-laden industries has largely been supported through local government financing.³³ In an effort to bolster local economic growth in a given Chinese town or province, local governments borrow to finance infrastructure projects that artificially boost demand for construction services and building materials. Consequently, local government debt is raising China's overall debt-to-GDP ratio at record rates and introducing another vulnerability to China's economic growth. In December 2013, a report issued by China's National Audit Office (NAO) revealed that "three provincial governments, 99 cities, 195 county-level administrations, and 3,465 townships had local public debt exceeding 100 percent" of their local economic activity.³⁴ In total, the NAO report disclosed that China's local governments held nearly \$3 trillion in debt, approximately one-third of China's GDP in 2013.³⁵

In recent years, China's central government has tried to rein in rising local government debt to lessen the oversupply of property and industrial overcapacity; however, Beijing's efforts have been largely inconsequential. Local governments have simply circumvented central government restrictions by borrowing from the large shadow banking sector.³⁶ The shadow banking system can be broadly defined as "lending that falls outside of the official banking system," and includes lending products such as entrusted loans, investment trusts, wealth management products, credit guarantees, and certain forms of microlending.³⁷ This year, the China Banking Regulatory Commission revealed that China's shadow banking sector reached about \$5.29 trillion, or 57 percent, of GDP in 2013.³⁸ Beijing has attempted to rein in the prominent shadow banking sector. For example, in May, the People's Bank of China (PBOC),

China's central bank, instructed commercial banks to limit inter-bank lending and lending to other financial institutions—both of which are important financing mechanisms for shadow bank lending. According to analysts, by limiting lending between banks and financial institutions, the government can curb risk-laden debt across the economy.³⁹ The government's efforts seem to have slowed shadow bank lending, which declined since 2013 as a share of aggregate credit; however, borrowing has simply shifted to the bond market, nullifying any net effect on overall debt.⁴⁰ (For more analysis of China's shadow banking sector, see the U.S.-China Economic and Security Review Commission's *2013 Annual Report to Congress*, Chapter 1, Section 3, "Governance and Accountability in China's Financial System.")

Stimulus—Scale and Effectiveness

Setting aside the structural reforms promised in the 2013 Third Plenary Session of the 18th CCP Central Committee (hereafter, "Third Plenum"), the Chinese government in 2014 resorted instead to economic stimulus to mitigate the slowdown. Although the Chinese government promised not to employ large-scale stimulus in 2014, Beijing implemented expansionary fiscal initiatives throughout the year to bolster the economy and maintain a growth rate at or near the official 7.5 percent target. Chinese Premier Li Keqiang stated that the government would only rely on "smart and targeted regulation" rather than strong stimulus.⁴¹ The government was wary of increasing already high debt levels, particularly among local governments.⁴²

Unofficially referred to as a "mini-stimulus," fiscal initiatives announced in July 2013 included expanded investment in railways and public housing, as well as reductions in the Required Reserve Ratios (RRRs) for banks, tax breaks for small businesses, and incentives for homebuyers.⁴³ Economists estimated that these fiscal initiatives, initially modest in volume, would have been insufficient to offset the effects of the slowing property market on economic growth.⁴⁴ Indeed, following the announcement of 7.4 percent GDP growth in the first quarter of 2014, the Chinese government steadily added to the initial "mini-stimulus," steering growth back toward the official target rate of 7.5 percent. For example, in September 2014, the PBOC provided \$81 billion in low-interest loans to China's five major state-owned banks as growth estimates declined in the third quarter of the year.⁴⁵ In July, the IMF called on China to lower its economic growth targets for 2015 and refrain from continued stimulus in favor of a "safer and more sustainable growth path."⁴⁶

Fiscal Spending: China's overall fiscal spending increased and accelerated throughout 2014 as the government increased stimulus. New central government spending, which increased 15.8 percent year-on-year in May, continued to support railway expansion, but also included other large infrastructure projects such as highways, oil and gas distribution, and storage facilities.⁴⁷ By mid-2014, the government had raised railway spending to \$128 billion, an increase of about 25 percent from 2013.⁴⁸ The China Railway Corporation (formerly, the Ministry of Railways) announced that it would be constructing 4,350 miles of new tracks in 2014.⁴⁹ Some

analysts claim that China's rail system does not suffer from the overcapacity found in other sectors and is, therefore, ripe for enhanced investment.⁵⁰ However, others argue that government subsidization of freight rail and investment in rail infrastructure serve as an indirect subsidy to China's export-oriented industries.*⁵¹

Despite high debt levels, Beijing urged local governments to boost fiscal spending. Fiscal spending accelerated throughout 2014 reaching a year-on-year increase of 26.1 percent in June.⁵² While the value of these fiscal initiatives paled in comparison to the \$640 billion stimulus implemented during the 2008–2009 global economic slowdown, the steady expansion of the stimulus over the year illustrated the Chinese government's commitment to bolstering the economy to avert rising unemployment and possible social instability.

As the decline of China's property market became the main risk to its economy in 2014, the government made policy adjustments to increase demand for housing. For example, the PBOC encouraged the country's largest banks to accelerate mortgage approvals.⁵³ Banks began offering low down-payment options to help first-time homebuyers.⁵⁴ Local governments also provided incentives to home buyers, such as tax breaks⁵⁵ and local household registration,† or *hukou*, to residents from other Chinese provinces.⁵⁶ On the supply side, the government also reduced reserve requirements of banks to allow property developers to obtain easier financing.⁵⁷ To boost lending, Chinese regulators redefined how loan-to-deposit ratios are calculated; the maneuver freed up new credit for small businesses.⁵⁸

Building Megaregions with Mini-Stimulus

The government's increased infrastructure expenditure under the mini-stimulus is accelerating the Chinese government's plans to integrate cities into megaregions. According to the McKinsey Global Institute, China is currently integrating cities into 22 clusters, seven of which can be characterized as megaregions.⁵⁹ The megaregions are Guangzhou, Shenzhen, Hangzhou, Shanghai, Nanjing, the Shandong Byland, and the Jing-Jin-Ji cluster, which includes Beijing, Tianjin, and parts of Hebei province.

However, the government's efforts to build megaregions have also come under criticism for contradicting Xi Jinping's pledge to let the market play a decisive role in the economy. While 2014 stimulus spending was small compared to the 2008 package, economists are concerned that China continues to resort to investment spending to boost the economy, exacerbating the overcapacity problem, and elevating the risk of an impending debt crisis. As one analyst remarked, "There are only so many 'ghost cities' and 'high-speed rail lines to nowhere' [Xi's] government can build."⁶⁰

* In the United States, the freight railway operators own the vast majority of rail tracks and self-finance new rail infrastructure investment.

† The location of one's household registration in China is the basis for eligibility to receive a variety of government services, such as education. It has traditionally been very difficult to change the location of one's household registration in China.

Building Megaregions with Mini-Stimulus—Continued

Furthermore, many urban planners argue that China’s megaregions are not being built in a way that would maximize the advantages of large urban clusters. Specifically, China’s megaregions are built around a single urban core with concentric circles of commuters extending out from the center.⁶¹ Some urban planning experts say that this model worsens traffic and pollution because residents will ultimately gravitate toward the megaregion’s core for work and city services.⁶² For example, Jan Wampler, a Massachusetts Institute of Technology (MIT) architect, criticized the Jing-Jin-Ji megaregion as simply an expansion of Beijing by building out more commuter ring roads.* Wampler said, “You can’t continue to build ring roads. It’s got to stop sometime.”⁶³ Instead, planning experts believe that the integration of cities only works when multiple urban cores are maintained, such as the U.S. Northeast corridor stretching from Washington, DC, to Boston, MA.⁶⁴

Supporters of the megaregion concept respond that these urban clusters are at less risk of becoming ghost towns since they build upon the economic momentum of China’s major cities. For example, in the case of the Jing-Jin-Ji cluster, advocates argue that the integration of the nearby but lesser developed Hebei region into the Beijing-centric megalopolis will reduce pressure on Beijing’s housing market, migrant flow, and water scarcity.⁶⁵

Status of China’s Economic Reform Agenda

In 2014, China’s government made minimal progress on the economic reforms it pledged to implement during the 2013 Third Plenum.⁶⁶ At the Third Plenum, Chinese President Xi Jinping announced an ambitious and comprehensive economic reform plan. In an oft-cited speech from that event, Xi stated the following:

*A proper relationship between the market and government remains the core of China’s economic reform. To build such a relationship is to settle whether the market or government plays a decisive role, and the market has proven to be the most effective.*⁶⁷

Xi’s comments articulate a clear guiding principle that the market should play a “decisive role” as China implements reforms.⁶⁸ However, in the same speech, Xi emphasized that the state would continue to play a key role in the economy, seemingly contradicting the so-called “decisive role” of the market. Critics noted that Xi’s comments should therefore not be misinterpreted to mean that the CCP would relinquish any power over China’s economy; on the contrary, the reforms have the potential to strengthen the CCP’s influence by clarifying the role of the state and consolidating its

*A ring road is a circumferential highway that surrounds a city, similar to the Capital Beltway (I-495) around Washington, DC, I-695 around Baltimore and I-285 around Atlanta (285). European cities, such as Stockholm, London, and Rome also have ring roads surrounding a city center.

power.⁶⁹ As The Brookings Institution scholar Arthur Kroeber said, “The respective roles of state and market need to be clarified, but the state role will remain very large.”⁷⁰ However, the IMF noted in a July 2014 country report on China that its reform blueprint “has not been followed up with details on the specific reforms or timetables.”⁷¹ In lieu of implementing substantive economic reforms, Xi and his economic reform leadership team spent the better part of 2014 consolidating political power and executing a vast anticorruption campaign.⁷²

Reform Leadership and Power Consolidation

In 2013, the Chinese government underwent a once-in-a-decade leadership transition that brought in Xi Jinping as president and altered the membership of the Politburo and other Party organs.* Initially, the transition sparked uncertainty about who would guide China’s future economic policies. Many analysts believed a broad consensus in China’s government supported comprehensive reform, highlighted by the November 2013 Third Plenum. At the National People’s Congress (NPC) meetings in March, the annual work reports issued by the Premier, the Ministry of Finance, and the National Development and Reform Commission (NDRC) were more detailed than previous reports, and appeared to build on the Third Plenum agenda.†

However, in 2014, President Xi took control over key Party organs, suggesting that he believes centralization of power is necessary to implement his reform agenda. For example, Xi has reorganized the CCP’s Central Committee’s small leading groups and now personally chairs more than half of them, including the powerful Comprehensive Deepening Reform, State Security, and Internet Security and Informationization groups.⁷³ The government’s justification for creating the Reform Group is that the Third Plenum reforms would be hard to implement through existing institutions, which represent local and sectoral interests, and do not coordinate sufficiently.⁷⁴ Attacking “vested interests” may present a pretext for Xi to target rivals, particularly in state-dominated sectors.⁷⁵

Some Key Economic Officials in Xi’s Cabinet

Lou Jiwei (Minister of Finance): Lou Jiwei is one of the most frequently quoted Chinese officials. In response to concerns about China’s economic slowdown, Lou argued that job creation is more important than GDP growth, and that a weaker role for manufacturing will help to relieve overcapacity and pollution.⁷⁶

* For more information, see Chapter 1, Section 1, of the U.S.-China Economic and Security Review Commission, *2013 Annual Report to Congress*, November 2013.

† For details, see Nargiza Salidjanova and Iacob Koch-Weser, *China’s 2014 Government Work Report: Taking Stock of Reforms* (U.S.-China Economic and Security Review Commission, April 1, 2014). http://origin.www.uscc.gov/sites/default/files/Research/USCC%20Backgrounder_NPC%20scorecard.pdf.

Some Key Economic Officials in Xi's Cabinet—Continued

He has also called on China to shift its tax base from production to consumption, with a focus on luxury goods, property, and energy-intensive products.⁷⁷ In an unusual move, Lou acknowledged in June 2014 that “persistent downside pressures in economic growth” could force the government to miss its fiscal revenue target, even as President Xi stated that there was “no way” China would miss its 2014 GDP growth target.⁷⁸ In China’s power structure, Lou likely has less influence than long-serving central bank head Zhou Xiaochuan, who was allowed to retain his post after the leadership transition.⁷⁹ The Xi administration recently criticized mismanagement at China’s sovereign wealth fund China Investment Corporation, where Lou served as chairman from 2007 to 2013.⁸⁰

Zhou Xiaochuan (PBOC Governor): Following the extension of his term as PBOC governor in March 2013, Zhou Xiaochuan now stands as China’s longest serving central banker.⁸¹ The extension of his tenure following last year’s leadership transition is likely related to his reformist views on interest rates and China’s exchange rate regime. Zhou is credited with overseeing the transition away from a fixed exchange rate to the current “managed float” system that designates a limited daily trading band within which the RMB can change value vis-à-vis the U.S. dollar.⁸² He is also known for recruiting U.S. educated economists into key PBOC posts, which is further evidence of his reformist views on economics.⁸³ Under Zhou’s leadership, the PBOC has taken marginal steps to address China’s growing credit crisis, such as by limiting lending within the shadow banking sector. However, given that the PBOC is not an independent government entity like the U.S. Federal Reserve, it is unlikely the Zhou-led PBOC will have the same power as the Federal Reserve in implementing broader economic reforms.

Zhang Gaoli (Executive Vice Premier): Considered to be a close ally of Xi Jinping, Zhang Gaoli holds multiple high-level titles that imply he is a key economic figure in Xi’s cabinet; however, analysts say that his “low-profile approach” makes it difficult to determine which economic issues are more important to him and how influential he is in Xi’s decision-making.⁸⁴ Zhang is not only a member of the Politburo Standing Committee and the executive vice premier; he also holds one of the four positions on the leading small group on reform, along with Xi Jinping, Li Keqiang, and Liu Yunshan. However, Zhang holds no other key positions on any other leading small groups.⁸⁵ Some analysts argue that Zhang’s leadership experience in some of China’s most developed regions, including Shenzhen, Shandong, and Tianjin, is evidence of Zhang’s support for economic reform.⁸⁶ However, Zhang’s alleged persecution of Falun Gong followers when he was Party secretary in Shandong province and his tight grip on the media when serving as Party secretary in Tianjin are evidence of his opposition to political reform.⁸⁷

Some Key Economic Officials in Xi's Cabinet—Continued

Wang Yang (Vice Premier): Prior to the leadership transition, Wang Yang served as Party secretary of Guangdong province, and was known as a particularly liberal reformer. He failed to secure a seat on the Politburo Standing Committee, giving him less authority than Zhang Gaoli. That is also reflected in the Central Reform Leading Group, where Wang Yang is an ordinary member, whereas Zhang co-heads the Group.⁸⁸ Nonetheless, Wang Yang is actively engaged in China's economic policy. He has inherited many functions of Wang Qishan, the former vice premier who now spearheads Xi's anticorruption campaign. Wang Yang is lead negotiator in China's Strategic and Economic Dialogue (S&ED) and Joint Commission on Commerce and Trade (JCCT) talks with the United States, where he has emphasized the importance of the Third Plenum reform agenda.⁸⁹ He frequently serves as interlocutor for foreign companies and commercial delegations, and has emphasized the importance of improving intellectual property protection and developing e-commerce.⁹⁰

Xu Shaoshi (Director of the NDRC): The NDRC, the powerful supra-ministry that formulates industrial policies, issues approvals, and sets prices, has arguably been relegated to secondary status under the new leadership.⁹¹ No one from the NDRC is represented in the Central Leading Reform Group, and the agency's former Deputy Director Liu Tienan was indicted on corruption charges in June 2014.⁹² However, the NDRC's current director Xu Shaoshi appears keen to adapt the agency to the reform agenda of the new leadership. Xu has called for increasing private sector investment in financial services, energy, and utilities, a departure from the NDRC's historic protection of domestic industry.⁹³ He told the NPC in March that the focus on industrial growth was restraining efforts to cut emissions and energy use.⁹⁴ Xu is also heading a new coordinating body, established by the State Council in May, which will seek ways to reduce income inequality.⁹⁵ On July 8, Xu published a lengthy opinion piece in the *People's Daily*, the Party-controlled paper, in which he praised "Comrade Xi Jinping's" "brilliant" speeches on market reform since the 18th Party Congress.⁹⁶

Xi Jinping's Anticorruption Campaign

In 2014, Xi Jinping accelerated his anticorruption campaign to address a major source of public dissatisfaction and eliminate his political opponents while further consolidating his power.⁹⁷ However, some analysts believe that the elimination of other political factions, namely former Politburo Standing Committee member Zhou Yongkang and his supporters as well as former President Jiang Zemin's lingering loyalists in the Shanghai region, is Xi's method for laying the groundwork for wider economic reforms.⁹⁸ The 2013 Third Plenum called for internal Party reform and reform of the CCP's disciplinary system in its blueprint for China's economic reforms. Xi and his likeminded reform leaders argued that

the government must eliminate the long-standing incentives that entice officials—especially local officials—to engage in corrupt practices.⁹⁹ For example, in September 2013, executives of China’s largest oil and gas company PetroChina were forced out when the government launched a corruption campaign.¹⁰⁰ As one of China’s three big oil companies, PetroChina has control over domestic fuel prices and oil supply in the Chinese energy market. Some analysts predict that Xi’s pro-reform government initiated the corruption probe into PetroChina as a means of breaking the state-owned enterprise (SOE) into smaller companies, thereby allowing for some privatization of the oil sector. The logic is that if Xi is able to remove high-level officials with vested interests in SOEs such as PetroChina on the basis of corruption, he can more swiftly implement other SOE-related reforms.¹⁰¹

Because President Xi’s ten-year term is in its beginning, the impact of Xi’s broad-sweeping housecleaning on his economic reform aspirations is not yet clear. Some analysts believe that if the anticorruption campaign continues to gain momentum, Xi risks intimidating the broad majority of Chinese officials into isolation, rendering them unwilling to govern effectively.¹⁰² Moreover, if Xi fails to implement other economic reforms in a timely manner because of a prolonged anticorruption purge, it is likely that China’s economic growth will continue to slow and imbalances will worsen.¹⁰³ (For more analysis of Xi’s anticorruption campaign, see Chapter 2, Section 3, “China’s Domestic Stability.”)

Stagnant Implementation of Economic Reform

China made minimal progress in 2014 toward implementing the economic reforms laid out in the 2013 Third Plenum.¹⁰⁴ The government stopped short of fulfilling its reform promises despite its slowing economy and ongoing dependence on export and investment-led growth. In July, the IMF urged China to expedite its economic reform agenda stating that it was “increasingly urgent” and that the current growth model was “not sustainable and is raising vulnerabilities.”¹⁰⁵ U.S. Treasury Secretary Jacob Lew called on China “to speed up” its reforms, reduce reliance on exports, adopt a consumption-led growth model, and contribute to a level playing field in global trade.¹⁰⁶ The U.S.-China Business Council reported that only six out of 59 reform policy announcements have a “significant impact” on foreign investment; of these, four were described as “largely aspirational.”¹⁰⁷

Shanghai Free Trade Zone (FTZ): Launched in September 2013, the Shanghai FTZ was lauded as one of China’s major reform initiatives.¹⁰⁸ However, the FTZ has achieved minimal progress in 2014 as businesses and legal advisers struggle to find any notable benefit from operating in the trade zone rather than elsewhere in China.¹⁰⁹ Incremental trade-related reforms, such as lifting a ban on foreign video game consoles, have benefited some niche industries; however, analysts compare these reforms to those of a traditional Chinese special economic zone, such as Shenzhen, noting that the Shanghai FTZ was intended to be far more comprehensive in its liberalization.¹¹⁰ Regarding foreign investment, the Shanghai FTZ adopted a negative list approach to regulating which sectors

face restrictions on foreign investment.* The FTZ came under criticism, though, when the negative list was revealed to include 190 sectors with foreign investment restrictions. In what was probably the most notable advance in the FTZ thus far, China reduced that number to 139 sectors in July, granting greater foreign investment access in industries such as finance, health care, and entertainment.¹¹¹

Monetary reforms were also intended to be a defining characteristic of the Shanghai FTZ; but these have been largely inconsequential, and economists have criticized some of the more aggressive reforms as infeasible. In one ostensible reform, the Chinese government informed foreign companies that by holding bank accounts in the Shanghai FTZ, they can more easily transfer excess local currency in and out of China; however, FTZ officials were reported saying that the process can already be done nationwide, based on regulations outside of the FTZ.¹¹² The government has also promised liberalized interest rates and full currency convertibility within the FTZ. Neither of these reforms has yet to be launched, and economists argue that it is nearly impossible to liberalize interest rates and adjust monetary policy within only a small region of the country.¹¹³ Economists believe that liberalized rates within the FTZ alone would not be a meaningful test of the economic reforms Beijing purports to launch nationally. Similarly, currency convertibility confined to the FTZ would require “a strong firewall,” which economists argue is challenging and would fail to accurately test the reforms on a nationwide basis.¹¹⁴

State-Owned Enterprise (SOE) Reform: Reform of China’s SOEs largely stalled in 2014, though some limited SOE reform did take place. For example, Sinopec launched a hybrid ownership structure that permits private investors to purchase company shares, and PetroChina privatized some of its pipeline business as well.¹¹⁵ On the policy side, the U.S.-China Business Council (USCBC) tracked three new official policies on SOE reform, including a Shanghai municipal government announcement that accelerates SOE reform, but only for Shanghai-based SOEs; a China Securities Regulatory Commission (CSRC) notice that requires SOEs to provide a portion of their revenues back to the government; and a State-Owned Assets Supervision and Administration Commission (SASAC) statement calling on SOEs to improve efficiency by using economic value-added (EVA) to measure performance.¹¹⁶ In addition, the anticorruption campaign is considered to be contributing partially to SOE reform by eliminating vested interests of government officials and incentives to engage in corruption.¹¹⁷

Financial Reforms: On financial reform, China made very limited progress toward liberalizing interest rates and reforming its government-managed exchange rate system that has allowed it to undervalue and manipulate its currency.¹¹⁸ China’s economy has been under increasing pressure to liberalize interest rates as risk-

* China has traditionally used purchasing catalogs to denote which products, services, and investments are approved for market access. Sectors not specifically listed in the catalogs are restricted from foreign competition. The system more widely used globally is a “negative list” approach which denotes only those sectors which face market access restrictions; sectors not listed are considered open.

ridden shadow banking and unregulated wealth managed products have flourished in circumvention of financial regulations.¹¹⁹ The shadow banking sector poses risks because it does not provide adequate disclosures of risk-related information to investors.¹²⁰ While China's regulators may understand that deregulation of interest rates is the best solution to reining in the massive shadow-banking sector and addressing China's growing debt problem, they lack the political clout to implement such a reform.¹²¹ In addition, the government has long touted the need for a bank deposit insurance system, but to date, has not implemented one.¹²² Although the World Bank, IMF, and U.S. government have called on China to implement these reforms in a timely manner, PBOC Governor Zhou Xiaochuan said the timing would depend on "good conditions" in the Chinese and global economies, and estimated that liberalization would take two years.¹²³

China made few reform moves toward a more flexible market-based exchange rate system. The United States has repeatedly called on China to adopt a floating exchange rate policy and cease undervaluing its currency; a policy that makes Chinese products cheaper and, therefore, serves as an export subsidy. Secretary Lew said that China needs to speed up floating its currency, a measure that will be a "crucial step" for the economy. However, during the 2014 U.S.-China Strategic and Economic Dialogue, Chinese Vice Premier Wang Yang warned against China moving too fast in exchange rate reform.¹²⁴ PBOC Governor Zhou Xiaochuan said that while China will "eventually" move toward a market-determined exchange rate regime, money flows were too unstable to do so now.¹²⁵ Despite the government's often stated intention of floating its currency, China has never tried to achieve this goal, nor has it announced any timeline for doing so.

Foreign Investment Reform: China's government has made minimal progress in liberalizing restrictions on foreign investment. In September 2013, the PBOC issued a "Notice on Relevant Matters Regarding RMB Settlement of Foreign Investors Investing in Domestic Financial Institutions," which allows foreign investors to use local currency for a broad range of domestic financial transactions that can support their expansion within China.¹²⁶ This was the only reform related to foreign investment that the USCBC reported as having a "significant impact" on foreign companies operating in China.¹²⁷ USCBC considered other reform initiatives that streamline certain administrative processes for foreign firms in China to have only moderate or limited impact.¹²⁸ Many sectors remain fully or partially closed to foreign investment in China, but the government has reformed foreign ownership restrictions in some niche sectors, such as hospitals.¹²⁹

Administrative and Procedural Reforms: Administrative reforms—specifically regarding how companies are incorporated and obtain licenses in China—were one area where the government took some positive, though still incremental, steps forward. In February, China's State Council issued a "Notice on Registered Capital Registration System Reform," which reduced capital requirements for establishing new businesses and streamlined incorporation processes.¹³⁰ According to legal analysts, the reforms should apply

to both domestic and foreign-invested businesses.¹³¹ The USCBC rated the measure as having “significant impact” on the operation of foreign firms in China. Other measures adopted by the State Council simplified procedures for obtaining administrative licensing, and began laying the groundwork for reviewing new investment projects based on a negative list approach to restricting foreign investment.¹³²

Internal Reforms: China made moderate progress in planning for certain internal reforms in areas such as the tax system, household registration or *hukou* system, and urbanization. Xi Jinping said, “Now the Chinese economy is too complex; [China] must first build the institutions of economic governance in which the market will operate.”¹³³ According to former World Bank president and U.S. Trade Representative Robert Zoellick, this implies that internal reforms such as the tax and household registration system are priorities for Xi.¹³⁴ Concrete timelines set out by the government in these areas indicate that the reform leadership considers these time-sensitive areas of reform. For example, the Ministry of Finance announced in July that a reform of China’s tax system, which includes a phased shift toward greater dependence on a value-added tax (VAT), will be completed by 2016.¹³⁵ In 2014, China announced multiple reforms to its household registration system that currently blocks many migrant workers in China’s largest cities from access to basic social services, such as education.¹³⁶ The reforms should allow for migrants from other provinces to apply for local *hukou* registration in the city they have migrated to, though initially the reforms are restricted to medium-size cities.¹³⁷ Analysts in China are optimistic that, with Beijing leading *hukou* reform, the effort may be “substantive” and “systematic.”*¹³⁸ (For more analysis of the *hukou* system, see Chapter 2, Section 3, “China’s Domestic Stability.”)

China’s Economic Rebalancing

In the absence of substantive reforms, China’s economic imbalances—both external and internal—continue to plague its economy and burden the U.S. and global economies. Externally, China’s dependence on exports for growth, which is supported by an undervalued currency, as well as large volumes of foreign currency reserves, contributes to major global trade imbalances. Internally, the government’s failure to shift the economy toward a consumption-based growth model sustains China’s overdependence on investment and limits opportunities for U.S. exports to China.

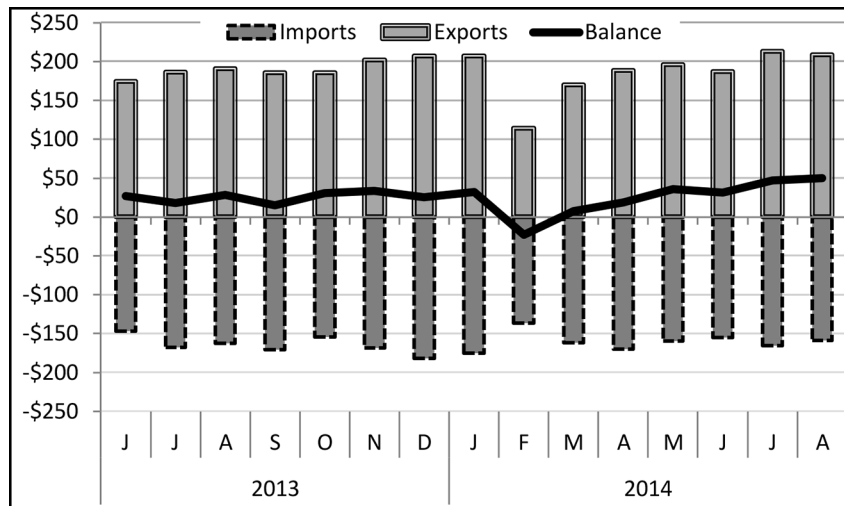
External Rebalancing

Global Trade Imbalances: In 2014, China maintained a global trade surplus, a hallmark feature of its export-oriented growth model. As of June, China’s trade surplus was approximately \$31.5 billion, a year-on-year increase of 16 percent. China’s expanding current account surplus was driven by increased exports, which rose by 7 percent year-on-year. Imports into China increased 5 percent year-on-year, but the higher rate of increase of exports was sufficient to sustain China’s surplus. As depicted in Figure 6, Chinese exports recovered in the first half of 2014 from a seasonal

drop in February. Thus, despite slowing economic growth, China's global trade surplus, including export levels, continued to rise as the government injected stimulus into the economy and maintained an undervalued currency. The IMF indicated that a reduction in China's current account surplus as a percentage of its GDP to 1.9 percent in 2013 was a positive sign toward external rebalancing; however, the change was due largely to weak global demand and increasing investment boosted by the stimulus.¹³⁹

Figure 6: China's Global Trade Flows

(US\$ billions)

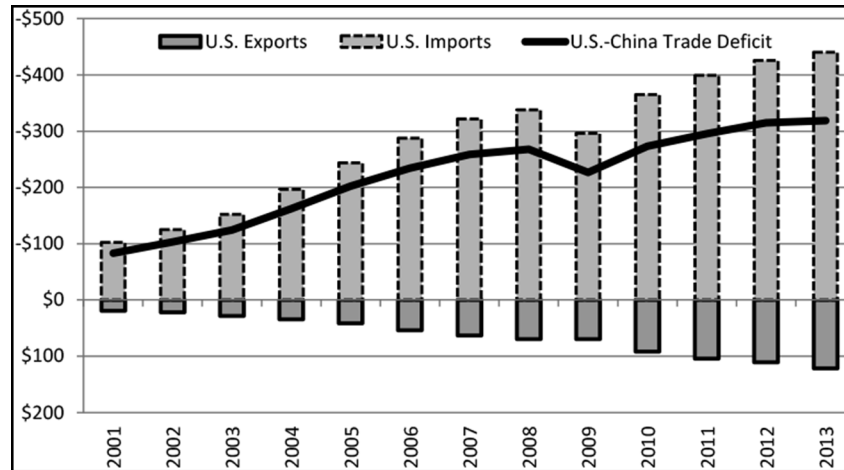


Source: China General Administration of Customs, via CEIC database.

Figure 7 shows the trend in the U.S.-China trade balance since 2001, when China joined the World Trade Organization (WTO). In the first eight months of 2014, the U.S.-China trade deficit in goods was over \$216 billion, an increase of 4.1 percent from the same period in 2013, according to data from the U.S. Census Bureau. In the first half of 2014, U.S. exports to China grew 6.2 percent year-on-year, while Chinese imports increased by only 4.6 percent.* The U.S.-China trade deficit in Advanced Technology Products (ATP) was \$72.6 billion in the first eight months of 2014, an increase of less than 1 percent year-on-year.¹⁴⁰ Tables 1 and 2 outline the top five U.S. exports to China and U.S. imports from China in the first half of 2014, respectively. The United States continued to register a trade surplus with China in services, which totaled \$13.5 billion in the first half of 2014, an increase of 25 percent year-on-year.¹⁴¹ (For further analysis of the challenges of the U.S.-China economic and trade relationship, see Section 2, "U.S.-China Bilateral Trade and Economic Challenges.")

*This calculation is based on the value of U.S. exports to China year-to-date from January to May 2014. The year-on-year comparison refers to the same period in 2013.

Figure 7: U.S. Trade Deficit with China
(US\$ billions)



Source: U.S. Bureau of Economic Analysis.

Table 1: Top Five U.S. Exports to China

Product Type	2014 H1 (US\$ billions)	Percent Change (year-on-year)
Transportation Equipment	12.2	21.6%
Computer and Electronic Products	7.8	-0.7%
Agricultural Products	7.3	10.2%
Chemicals	6.9	6.0%
Machinery (Except Electrical)	4.9	-3.2%

Source: U.S. Census Bureau.

Table 2: Top Five U.S. Imports from China

Product Type	2014 H1 (US\$ billions)	Percent Change (year-on-year)
Computer and Electronic Products	74.6	-0.3%
Electrical Equipment, Appliances & Components	17.7	17.0%
Miscellaneous Manufactured Commodities	15.2	4.9%
Machinery (Except Electrical)	15.1	26.1%
Apparel and Accessories	13.7	0.4%

Source: U.S. Census Bureau.

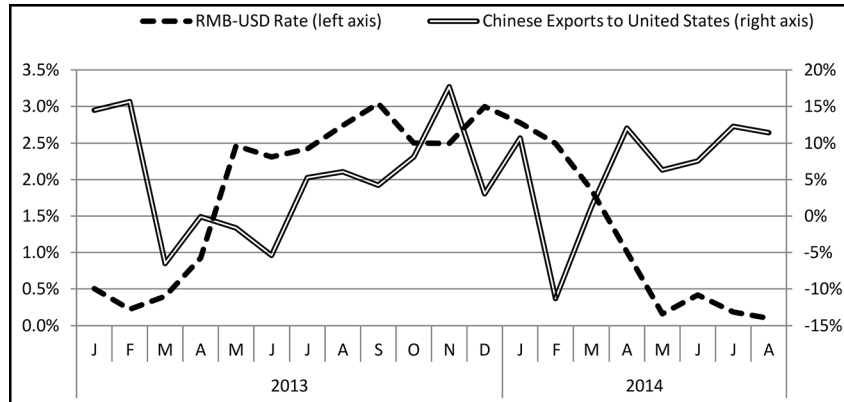
Monetary Policy Issues: Undervaluation of the RMB continues to serve as a subsidy to Chinese exports. In March 2014, the PBOC

doubled the RMB's trading band with the U.S. dollar (USD) to ± 2 percent each day.¹⁴² However, the Chinese government retained the power to set a new value for the RMB-dollar exchange rate each new trading day, even while allowing greater fluctuations in intra-day trading. While China's trade surplus should have caused the RMB to increase in value, the opposite happened as China continued to intervene massively in currency markets to lower the value of the RMB. The PBOC's confusing policy change was followed by an immediate weakening of the RMB against the USD by 7.7 percent from January to June. In its mid-year report to Congress released in April, the Treasury Department associated the expanded daily trading band with greater flexibility for China to intervene in its currency. The report states:

*In the month prior to the band widening, the PBOC took measures, including reported heavy intervention, to significantly weaken the RMB and push it away from the most appreciated edge of the previous band. The RMB has seen periods of depreciation before, such as mid-2012 when the RMB fell 1.5 percent against the dollar over a three-month period. However, the pace and the size of the recent decline were unprecedented.*¹⁵²

For the 20th consecutive year, the Treasury Department stopped short of officially accusing China of currency "manipulation"; however, a comparison of changes in the RMB-USD exchange rate against increases in Chinese exports demonstrates that the PBOC purposefully undervalued the RMB as a means of subsidizing Chinese exports during the first quarter of 2014, just as China fell short of reaching its 7.5 percent official growth target. As shown in Figure 8, the year-on-year change in the RMB value relative to the dollar, which had been gradually appreciating since 2005, suddenly declined sharply to almost no year-on-year appreciation by May. During that same period, year-on-year changes in Chinese exports to the United States, which were declining from November 2013 to February 2014 as China's economy slowed, suddenly spiked. In February, at the time of the PBOC band increase, Chinese exports to the United States were down about 11 percent year-on-year. By April, exports were increasing by over 12 percent year-on-year. Nonetheless, PBOC officials called the weakening of the RMB as falling within a "normal scope."¹⁴⁴

Figure 8: RMB Undervaluation as Export Subsidy
(Year-on-Year Change)

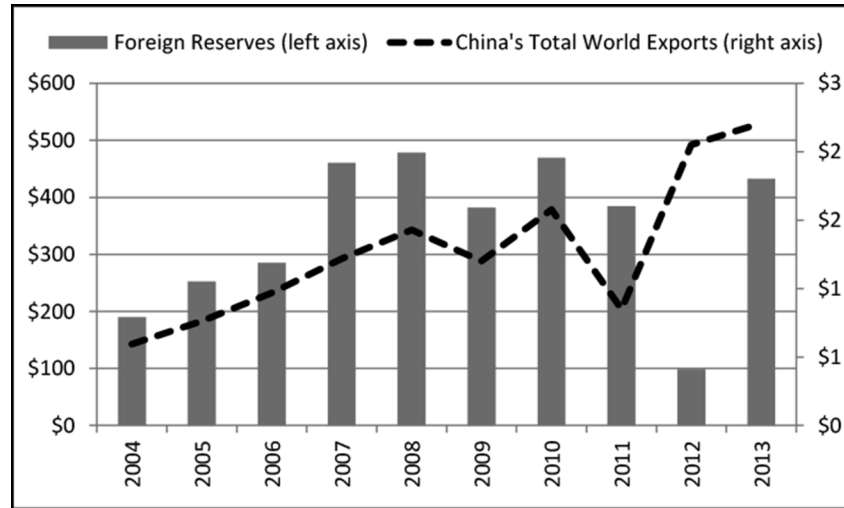


Source: People's Bank of China and General Administration of Customs, via CEIC data.

Foreign Exchange Reserves: Accumulation of foreign exchange reserves is further evidence of China undervaluing its currency and using monetary policy to subsidize exports. In the first quarter of 2014, China's foreign exchange reserves increased sharply by about \$140 billion bringing its total foreign reserve assets to nearly \$4 trillion. The foreign exchange reserve data from 2014 confirms that China's weakening RMB is due to "intensive intervention" by the PBOC.¹⁴⁵ Economists infer that China's increasing foreign reserves while maintaining a trade surplus is convincing evidence of heavy intervention in currency markets.¹⁴⁶ Figure 9 shows a direct correlation between China's exports and the purchase of foreign reserve assets from 2004 to 2011. Following a sharp drop in new foreign reserves in 2012, exports increased again as China resumed large-scale accumulation of foreign reserves in 2013. Preliminary data from 2014 indicates that this trend will continue. By May, Chinese exports began to increase again following the PBOC's massive interventionist policies in the first quarter.

Figure 9: China's Annual Acquisition of Foreign Reserves

(Left Axis: US\$ billions; Right Axis: US\$ trillions)



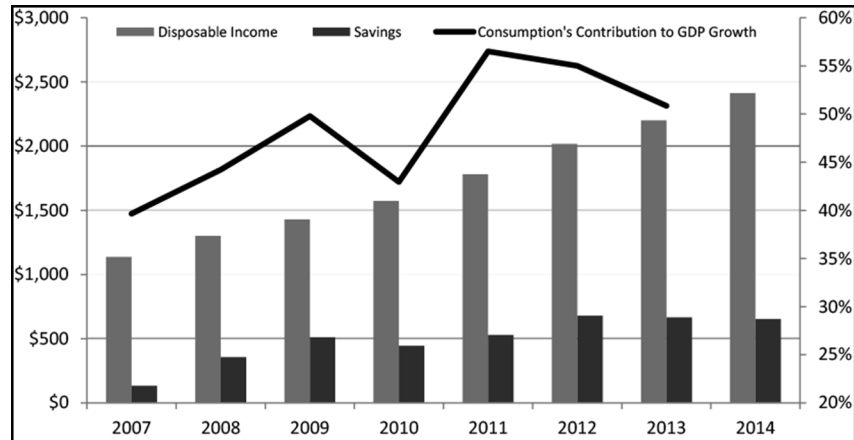
Source: China State Administration of Foreign Exchange and General Administration of Customs, via CEIC data.

Internal Rebalancing

The Chinese government's official narrative in 2014 was that its economy made progress toward a greater reliance on domestic sources rather than exports for growth by reducing wasteful investment.¹⁴⁷ China's growth model, which has been driven by high levels of investment in manufacturing capacity and infrastructure, is not sustainable and China needs to shift to a primarily consumption-driven growth model.¹⁴⁸ China's leadership has stated it accepts this view, which is also held by several Western governments, the World Bank, and the IMF. Analysis by the Peterson Institute for International Economics (PIIE) shows that in the first quarter of 2014, China's GDP growth and the growth rate of disposable income—a proxy for consumption capacity—expanded at nearly the same rate with a gap of only -0.2 percent.¹⁴⁹ PIIE economist Nicholas Borst said that the increase in Chinese disposable income, even during a time of slow growth, is the best sign for internal rebalancing in China since 2012.¹⁵⁰

Analysts continue to debate whether the positive trends in China's disposable income figures during 2014 reflect true internal rebalancing toward a sustainable consumption-led growth model. Figure 10 shows a comparison of annual per capita disposable income and savings with the contribution of consumption to GDP growth. Since 2012, per capita savings has remained constant, while per capita disposable income increased nearly 20 percent, an indicator of increasing consumption. However, with 2013 and 2014 government stimulus focusing on infrastructure investment and credit loosening—which tends to boost investment rather than consumption—the contribution of consumption to GDP growth declined from 2012 to 2013.

Figure 10: Per Capita Disposable Income and Savings in China
(Left Axis: US\$)



Source: China National Bureau of Statistics and People's Bank of China, via CEIC data. The data for disposable income and savings compare year-to-date data in June of each year. The consumption contribution to GDP data is annual.

Official data on the first half of 2014 indicates that consumption's contribution to GDP surpassed the contribution of gross capital formation this year.¹⁵¹ In addition, China's retail sales increased by 10.8 percent in the first half of 2014, which may also support this analysis.¹⁵² Analysts view both as positive signs of progress toward internal rebalancing; however, it remains to be seen if this trend toward greater consumption can be sustained in the absence of government stimulus and without increasing China's debt levels, which already account for 250 percent of GDP.¹⁵³

U.S.-China Bilateral Trade and Investment Issues

Bilateral Investment Issues

For the first time, Chinese foreign direct investment (FDI) flows into the United States are surpassing U.S. FDI into China.¹⁵⁴ This shift in the bilateral investment relationship occurs in an increasingly hostile investment climate for foreign firms operating in China.

Foreign Investment Climate in China: U.S. and other FDI flows into China continued a steady deceleration in 2014 as new investment opportunities dwindled and foreign firms faced hostile or discriminatory treatment by Chinese regulators (see Figure 11).¹⁵⁵ According to data from China's Ministry of Commerce, FDI into China declined 1.8 percent in the first eight months of 2014 compared to the same period last year.¹⁵⁶ According to University of North Carolina Finance Professor Christian Lundblad, the "low-hanging fruit" that foreign investors have enjoyed in China for years have been harvested, leaving opportunities only in the sectors where regulatory complications make investment very difficult or even impossible.¹⁵⁷ These include sectors dominated by Chinese SOEs, or in areas deemed sensitive or strategically important, such

as telecommunications, media, and financial services. In most of these sectors, foreign investment is either banned or restricted to joint ventures with Chinese partners.¹⁵⁸ Localization requirements—such as China-based research and development, technology transfer, and network servers—are also costly and inefficient for foreign businesses, especially those in the information and communication technology (ICT) sector.¹⁵⁹

Chinese regulators and state media have disproportionately targeted foreign firms operating in China with accusations ranging from monopolistic behavior to exploitation of Chinese consumers.¹⁶⁰ In 2014, China ramped up use of its Anti-Monopoly Law (AML) against foreign firms in what appears to be unequal enforcement in order to create favorable market conditions for Chinese competitors.¹⁶¹ This year, China used the AML to investigate foreign firms in sectors designated by the government as “strategic and emerging,” including automobiles and information technology. Four foreign industry associations including the U.S. Chamber of Commerce, the U.S.-China Business Council, the American Chamber of Commerce in China, and the European Union Chamber of Commerce in China issued reports in 2014 accusing China of unfair enforcement of the AML.¹⁶² The U.S. Chamber of Commerce said that “in many cases involving foreign companies, China’s anti-monopoly enforcement agencies have skewed the implementation of the AML and related statutes to support China’s industrial policy goals through discrimination and protectionism.”¹⁶³ The U.S.-China Business Council reported that 86 percent of respondents to its 2014 member company survey said that they were “at least somewhat concerned about China’s evolving competition regime.”¹⁶⁴ The European Union (EU) Chamber of Commerce said that the lack of transparency in China’s enforcement of the AML leaves speculation about the government’s intentions with the law.¹⁶⁵

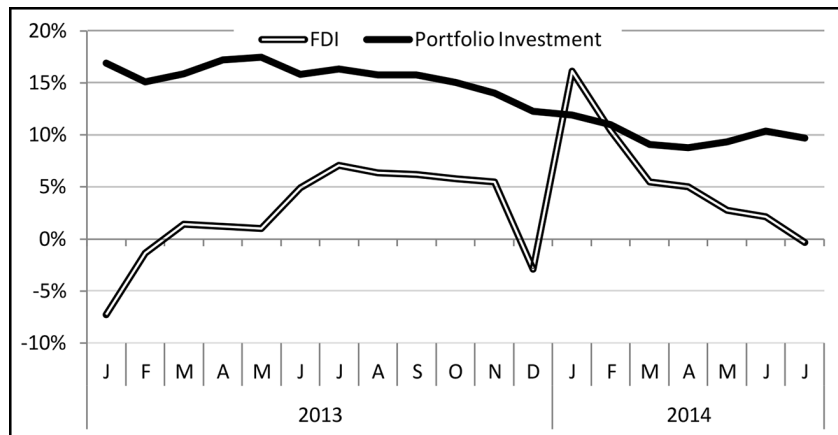
The U.S. Chamber of Commerce added that China disproportionately uses the AML against foreign firms to protect domestic industries and support national champions. The U.S. Chamber further argued that such unequal enforcement could violate China’s WTO obligations.¹⁶⁶ China’s NDRC, one of the enforcement agencies of the AML, refuted the industry groups’ accusations and claimed that in an NDRC review of 300 AML cases, only 10 percent were of foreign firms.¹⁶⁷ However, the NDRC failed to disclose the time frame of the 300 cases or how they were chosen for the review.

The Chinese government also uses procurement rules, state-media, and anticorruption laws to target foreign-invested firms disproportionately. For example, in May 2014, China banned the procurement of new government computers equipped with Microsoft’s Windows 8 operating system.¹⁶⁸ Two months later, under the auspices of an antimonopoly investigation, China’s State Administration for Industry and Commerce (SAIC) raided Microsoft’s offices in Beijing, Shanghai, Guangzhou, and Chengdu, seizing documents and computers.¹⁶⁹ In addition, in June 2014, Chinese state media called U.S. technology firms, such as Google and Apple, “pawns of the U.S. Government,” accusing them of espionage and cyber-theft in China.¹⁷⁰ Historically, China has disproportionately targeted foreign firms in corruption investigations, with one estimate indicating that of approximately 500,000 corruption investigations in

China between 2000 and 2009, 64 percent were of foreign-based firms.¹⁷¹ There also appears to be a coordinated effort by the Chinese government to promote domestic industries, while state-run media attack foreign competitors. For example, in 2010, after China announced plans to boost domestic-made car sales to control the majority of the Chinese auto market, state-run China Central Television (CCTV) launched a media campaign against Volkswagen that resulted in a recall of 640,000 vehicles.¹⁷²

In 2013, the USCBC described U.S. industry’s attitude toward investment in China as “tempered optimism.”¹⁷³ In its annual survey of the Chinese business environment, USCBC’s members agreed that nine of the ten most pressing challenges they face in China—which include uneven enforcement of Chinese laws, transparency issues, and discriminatory practices toward foreign firms—did not improve at all from the previous year.¹⁷⁴

Figure 11: Foreign Investment in China
(percent change year-on-year)



Source: FDI from China Ministry of Commerce and Portfolio Investment from China PBOC, via CEIC database.

Despite the growing hostility to foreign investment in China, foreigners continue to invest there, though the year-on-year rate has declined steadily through the first half of 2014 (see Figure 11). Commensurate with the leadership transition in early 2013, China’s FDI inflows remained generally positive with an upward spike in early 2014, perhaps in conjunction with enhanced government stimulus. However, as China’s government has generally stalled implementation of economic reforms, year-on-year increases in FDI inflows have decelerated to a rate of 2.2 percent in June 2014.¹⁷⁵ Likewise, portfolio investment into China has been decelerating almost continuously since September 2013.

Inbound Chinese Investment: While U.S. FDI into China is slowing, Chinese investment in the United States has grown dramatically. According to analysis by Rhodium Group, the stock of Chinese FDI in the United States grew from \$1.9 billion in 2007 to

over \$17 billion in 2012.¹⁷⁶ From 2011 to 2012, the number of Chinese investments—mergers and acquisitions and greenfield projects combined—nearly doubled from below 40 to about 70. Rhodium Group estimated there were 82 new investments in 2013. The increase in inbound Chinese FDI has occurred simultaneously with Executive Branch efforts to attract more foreign investment into the United States, particularly with hopes of spurring job creation. Rhodium Group estimates that in 2013, Chinese-owned firms employed more than 70,000 U.S. citizens.¹⁷⁷ In recent years, the Obama Administration began more targeted efforts to attract FDI, including FDI from China, by, for example, expanding the Department of Commerce’s investment promotion function in 2012.^{178,179}

China’s Share of U.S. Housing Market Grows

According to the National Association of Realtors (NAR), Chinese buyers ranked as the largest foreign purchasers of U.S. real estate by dollar value in 2014.*¹⁸⁰ Chinese buyers also constitute the fastest growing segment of foreign buyers.¹⁸¹ In the first three months of the year, Chinese buyers spent \$22 billion on U.S. homes, more than any other nationality, and an increase of 72 percent from the same period in 2013.¹⁸² Over 75 percent of buyers from China pay cash for U.S. homes, and the median home price among Chinese buyers was \$523,148, more than twice the median price of existing home sales.¹⁸³ With this growing demand, the online real estate listing company Zillow Inc. established a Chinese language search portal in 2014 to link more effectively with potential Chinese buyers.¹⁸⁴

The motivation of Chinese buyers to purchase U.S. homes is varied. Chinese buyers view purchasing U.S. homes as a cheap, but reliable, investment with strong rent potential.¹⁸⁵ In addition, by purchasing U.S. real estate as a limited liability corporation (LLC) or through other “creative corporate structuring,” the U.S. property market is a convenient way to store money overseas anonymously.¹⁸⁶ Perhaps the most cited reason for Chinese buyers to purchase a home in the United States is because their children are enrolled, or hope to enroll, in U.S. schools and universities. One survey of wealthy Chinese shows that 85 percent want to send their children overseas for school.¹⁸⁷ Real estate brokers report that Chinese buyers prefer property near major educational institutions; one New York broker said that many Chinese clients purchase in Manhattan in hopes of sending their children to Columbia or New York University.¹⁸⁸

In light of a \$50,000 cap on the amount of money an individual can take out of China per year, the methods some Chinese buyers use to acquire property in the United States raise questions

*The NAR includes buyers from Taiwan and Hong Kong in their classification of “Chinese.” However, the NAR confirmed that only about 1 percent of “Chinese buyers” surveyed were from Taiwan or Hong Kong with the remaining 99 percent reportedly from mainland China.

China's Share of U.S. Housing Market Grows—Continued

of legality, transparency, and money laundering. Because 76 percent of Chinese buyers are offering cash on U.S. homes averaging well over \$500,000, money must be wired or physically carried as currency or valuables into the country.¹⁸⁹ University of California Los Angeles economist William Yu says that wealthy Chinese find creative ways to circumvent the \$50,000 restriction, including laundering money through Macau casinos and “cooking the books” of import-export firms.^{190,191} Potential buyers can also set up LLCs or other corporate entities to make the property ownership “untraceable.”¹⁹²

According to the International Consortium of Investigative Journalists, this practice has allowed many U.S. real estate deals linked to Chinese financial and political corruption scandals to take place.¹⁹³ For example, the 2011 investigation of former Chinese Minister of Railways Zhang Shuguang revealed that he purchased an \$860,000 home in a suburb of Los Angeles in 2002 while his government salary was less than \$400 per month.¹⁹⁴ Weeks prior to the start of the investigation, Zhang transferred full ownership of the property to his wife. The investigation is reportedly continuing, and some analysts predict that the property may be seized as President Xi Jinping's anti-corruption drive begins to target the overseas assets of corrupt officials.¹⁹⁵

Bilateral Investment Treaty (BIT): Claimed by the Administration as a major breakthrough following the 2013 U.S.-China Strategic and Economic Dialogue, negotiations resumed with China on BIT in 2013 and continued throughout 2014.¹⁹⁶ The talks are divided into two phases, focusing first on the core text of the treaty and then on a so-called negative list of sectors that the parties would deem off limits or restricted to foreign investment.¹⁹⁷ During the 2014 U.S.-China Strategic and Economic Dialogue, the two sides committed to reach agreement on the core text by the end of 2014 and to start discussions on their respective negative lists early in 2015.¹⁹⁸ U.S. Treasury Secretary Lew estimated that a treaty—if one is ultimately agreed upon—would not be finalized until 2016 at the earliest.¹⁹⁹ Uncertainty remains about what China's negative list for the BIT will look like. U.S.-China Business Council Vice President Erin Ennis said that getting China to commit to a “commercially significant negative list could be a battle,” citing the Chinese government's sluggish approach to liberalization in the Shanghai FTZ.²⁰⁰ American Enterprise Institute expert Derek Scissors believes that given the increasingly hostile foreign investment climate in China, the United States should suspend the BIT negotiations, arguing that under current conditions, Chinese investors in the United States have much more to gain from an agreement than U.S. investors in China.²⁰¹

Bilateral Trade Issues

Trade tensions between the United States and China escalated in 2014 as key WTO cases advanced or were concluded and the

U.S. Department of Justice filed indictments against five People's Liberation Army (PLA) soldiers for engaging in state-sponsored, cyber-enabled theft of commercial property. Three key sectors of dispute included rare earths, auto parts, and Chinese subsidization of solar panels.

Rare Earths: In a March 26, 2014 decision, the WTO Dispute Settlement Panel ruled that China's export quotas on rare earths violated its WTO obligations.²⁰² Rare earths are crucial to many U.S. industries, especially clean energy and advanced electronics.²⁰³ The *Rare Earths* case was initiated in 2012 by the United States, the European Union, and Japan in response to China's restrictions on the exports of rare earths.²⁰⁴ The WTO Dispute Settlement Panel found that China failed to justify its restrictions as legitimate conservation or environmental protection measures, saying the export quotas were "designed to achieve industrial policy goals rather than conservation." China appealed the decision, but the WTO Appellate Body rejected its appeal in August.*²⁰⁵ Rare earths are one of many raw materials upon which China imposes export restraints. Trade law analysts estimate that China imposed export duties on 346 items in 2014, only 103 of which are permitted under China's WTO accession agreement.²⁰⁶ Even if China lifts all of the export restraints deemed unlawful in the WTO ruling on rare earths, 162 items will still be subject to export duties.²⁰⁷

Automobiles and Auto Parts: In another WTO Dispute Settlement Panel ruling, the United States was successful in its complaint regarding China's application of antidumping (AD) and countervailing duties (CVD) on U.S. cars and sport utility vehicles with an engine capacity of 2.5 liters or larger.²⁰⁸ China alleged that certain U.S. cars were being subsidized or "dumped" in its markets, citing two programs under the U.S. government's Troubled Asset Relief Program (TARP), which provided loans to General Motors (GM) and Chrysler.²⁰⁹ The U.S. defense focused on the failure by the Chinese Ministry of Commerce (MOFCOM) to demonstrate that the duties caused economic injury.²¹⁰ The Panel agreed with the U.S. defense and further found MOFCOM failed to disclose to U.S. respondents the essential facts that formed the basis of its decision to impose duties. China's duties affected an estimated \$5.1 billion worth of auto exports in 2013.²¹¹ Still pending before the WTO is another auto-related case, challenging Chinese subsidization of auto and auto parts producers located in designated regions known as "export bases."²¹² According to the U.S. Trade Representative (USTR), consultations last took place on the auto parts dispute in November 2012, and the United States and China have been "engaging in further discussions" since then.²¹³ There is no public information of further progress in the case.

Solar Panels: In 2014, the U.S. Department of Commerce announced preliminary determinations in CVD and AD investigations of imports of certain types of Chinese solar panels.²¹⁴ U.S. Customs will begin collecting the duties—which range from 18.56 percent to

* Following China's appeal, the United States also filed an appeal because of concerns related to the Panel's decision to reject certain exhibits issued in support of its case.

35.21 percent in CVDs and 26.33 percent and 165.04 percent in ADs.²¹⁵ The recent duties build upon CVD and AD duties ranging from 24 percent to 36 percent imposed by the Commerce Department in 2012 on other types of solar panel products imported from China.²¹⁶ Chinese manufacturers responded to those duties by buying solar cells from Taiwan and elsewhere, which allowed them to avoid most of the duties. The U.S. solar industry is divided about the duties, with many companies opposed to the Commerce Department's determination.*²¹⁷ Some U.S. solar panel manufacturers support the duties arguing that Chinese dumping of solar panels has harmed U.S. manufacturing and employment and that duties will help "level the playing field."²¹⁸ However, companies developing solar-power projects have criticized the duties arguing that they will result in more expensive equipment, thereby inhibiting innovation and growth in the solar energy sector. (For further discussion of clean energy issues, please refer to Chapter 1, Section 4, "U.S.-China Clean Energy Cooperation.")

Table 3 summarizes recent cases brought by the United States against China at the WTO. Table 4 lists recent cases by China against the United States. Addendum I provides a more comprehensive summary of unresolved or uncontested trade disputes with China, many of which have no public record of progress made in 2014.

Table 3: Recent WTO Cases Brought against China by the United States

No.	Title	Request for Consultations	Panel Report	Status
DS414	Measures Imposing Countervailing and Antidumping Duties on Grain-Oriented Flat-Rolled Electrical Steel (GOES)	September 15, 2010	June 15, 2012 (Appellate Body Report, October 18, 2012)	The Panel upheld U.S. claims, and the Appellate Body upheld the Panel decision; China agreed to implement the ruling by July 31, 2013. In January 2014, the United States requested consultations with China regarding China's failure to implement WTO ruling.
DS427	Antidumping and Countervailing Duty Measures on Broiler Products from the United States	September 20, 2011	August 2, 2013	The Panel upheld most U.S. claims. In July 2014, China informed the WTO that it had fully implemented the Panel's decision. The United States disagreed with China's assertion that it had fully complied.

*SolarWorld Industries America Inc. filed the AD and CVD petitions with the U.S. Department of Commerce and received support from the Coalition for American Solar Manufacturing, an industry association with 255 U.S. solar manufacturer members. The Coalition for Affordable Solar Energy, an association of 94 U.S. solar energy firms, is opposed to the duties. <http://origin.www.uscc.gov/sites/default/files/Research/June%202014%20Trade%20Bulletin.pdf>.

**Table 3: Recent WTO Cases Brought against China by the United States—
Continued**

No.	Title	Request for Consultations	Panel Report	Status
DS431	Measures Related to the Exportation of Rare Earths, Tungsten and Molybdenum	March 13, 2012	March 26, 2014 (Appellate Body Report, April 8, 2014)	The Panel upheld U.S. claims. In April 2014, both parties to the dispute appealed certain issues of law covered in the panel report. The Appellate Body rejected China's appeal, and did not rule on the U.S. appeal.
DS440	Antidumping and Countervailing Duties on Certain Automobiles from the United States	July 5, 2012	May 23, 2014	The Panel agreed with the United States that China's imposition of antidumping and countervailing duties on U.S.-made cars and SUVs violated China's obligations under the WTO.
DS450	Certain Measures Affecting the Automobile and Automobile-Parts Industries	September 17, 2012	In consultations; panel not yet formed	The United States requested consultations with China concerning export-contingent provisions of certain subsidies and other incentives to automobile and automobile-parts enterprises in China.

Source: WTO; compiled by Commission staff.

Table 4: Recent WTO Cases Brought against the United States by China

No.	Title	Request for Consultations	Panel Report	Status
DS437	Countervailing Duty Measures on Certain Products from China *	May 25, 2012	July 14, 2014	The Panel issued a mixed ruling, rejecting some of China's claims, but finding that the United States acted inconsistently with some of its obligations under the WTO. China appealed the decision.

**Table 4: Recent WTO Cases Brought against the United States by China—
Continued**

No.	Title	Request for Consultations	Panel Report	Status
DS449	Countervailing and Anti-dumping Measures on Certain Products from China ²¹⁹	September 17, 2012	March 27, 2014	The Panel upheld U.S. Public Law (PL) 112–99 entitled “An act to apply the countervailing duty provisions of the U.S. Tariff Act of 1930 to nonmarket economy countries, and for other purposes,” but found that the United States acted inconsistently with its obligations in failing to investigate whether “double remedies” arose in proceedings at issue.
DS471	Antidumping Methodologies	December 3, 2013	Panel established March 26, 2014; report pending.	China requested consultations with the United States regarding the use of certain methodologies in antidumping investigations involving Chinese products.

*The Chinese products concerned by these investigations consist of solar panels; wind towers; thermal paper; coated paper; tow behind lawn groomers; kitchen shelving; steel sinks; citric acid; magnesia carbon bricks; pressure pipe; line pipe; seamless pipe; steel cylinders; drill pipe; oil country tubular goods; wire strand; and aluminum extrusions.

Source: WTO; compiled by Commission staff.

Chinese State-Sponsored Cyber Theft

Cyber-enabled theft of intellectual property (IP) and commercial espionage are among the biggest risks facing U.S. companies today. In the United States, the annual cost of cyber crime and cyber espionage is estimated to account for between \$24 billion and \$120 billion (or 0.2 to 0.8 percent of GDP), and results in the loss of as many as 200,000 U.S. jobs annually.²²⁰ The Chinese government's engagement in cyber espionage for commercial advantage was exposed on May 19, 2014, when the U.S. Department of Justice charged five PLA officers for cyber-enabled theft and other related offenses committed against six U.S. victims, including Westinghouse Electric Co. (Westinghouse), U.S. subsidiaries of SolarWorld AG (SolarWorld), United States Steel Corp. (U.S. Steel), Allegheny Technologies Inc. (ATI), Alcoa Inc., and the United Steel, Paper and Forestry, Rubber, Manufacturing, Energy, Allied Industrial and Service Workers International Union (USW or Steelworkers Union).²²¹ According to the indictment, PLA Unit 61398 *²²² officers Wang Dong, Sun Kailiang, Wen Xinyu, Huang Zhenyu, and Gu Chunhui hacked, or attempted to hack, into the victims' computers to steal information that would be useful to competitors in China, including SOEs.²²³ One victim, SolarWorld, subsequently petitioned the U.S. Department of Commerce to investigate the allegations made in the indictment as they directly related to SolarWorld's ongoing trade dispute over imports of solar products from China.²²⁴

The Chinese government strongly denied what it called the "fabricated" allegations,²²⁵ and within days of the indictment, China retaliated both economically and politically against the United States. The Chinese government suspended participation in a U.S.-China Cyber Working Group, which was established in 2013 as a bilateral dialogue on cyber security.²²⁶ China also announced that its government offices were forbidden from using Microsoft's Windows 8 operating system and ordered security checks on foreign IT products and services seemingly directed at U.S. companies, including Cisco Systems.²²⁷ Likewise, the PBOC and the Chinese Ministry of Finance asked banks to replace IBM servers with those produced by domestic brands to protect financial security.²²⁸ In the same week, the Chinese government instructed SOEs to sever ties with U.S. consulting companies, including McKinsey, Boston Consulting Group, Bain & Company, and Strategy & Co. (formerly known as Booz & Co.), and urged SOEs to establish teams of domestic consultants out of fears that U.S. consultants are government spies.²²⁹

*In 2013, U.S. cybersecurity firm Mandiant issued a report that identified one of the "most prolific cyber espionage groups in terms of the sheer quantity of information stolen" as Shanghai-based Unit 61398 of China's PLA, confirming that it is highly likely that China engages in state-sponsored, cyber-enabled economic espionage of U.S. companies, including large-scale theft of IP and confidential business information.

Chinese State-Sponsored Cyber Theft—*Continued*

Chinese entities have long been engaging in cyber-enabled theft against U.S. companies for commercial gain; however, the May 19 indictment represents the “first ever charges against known state actors for infiltrating U.S. commercial targets by cyber means.”²³⁰ In addition, the indictment states that “Chinese firms hired the same PLA Unit where the defendants worked to provide information technology services.”²³¹ This established a channel through which the Chinese firms could issue tasking orders to the PLA defendants to engage in cyber theft and commercial espionage. For example, in one case, according to the indictment, a Chinese SOE hired the PLA Unit “to build a ‘secret’ database to hold corporate ‘intelligence.’”²³²

Of the 141 organizations allegedly compromised by PLA Unit 61398 since 2006, 81 percent were located or headquartered in the United States.²³³ In June 2013, the U.S. Department of Justice indicted Chinese energy firm Sinovel for cyber-enabled IP theft committed against Massachusetts-based American Superconductor (AMSC).^{*} Florida-based biofuel company Algenol, which is developing technology that converts algae into fuels while decreasing greenhouse gas emissions, fell victim to more than 39 million hacking attempts since mid-2013.²³⁴ According to Algenol’s technology chief, 63,000 hacking attempts came from China, of which 6,653 attempts came from IP addresses identified by cyber security firm Mandiant as belonging to PLA Unit 61398.²³⁵ Algenol’s investigation also identified Alibaba’s cloud computing subsidiary Aliyun as an originator of hacking attempts, though Alibaba claimed that Algenol mischaracterized ordinary Internet traffic as hacking attempts.²³⁶

China’s Multilateral Trade and Investment Issues

China’s Role in the Global Trade System

China’s engagement in the multilateral trade arena continued to reflect its protectionist policies and its lack of regulatory transparency. Concerns about China’s opaque policies were raised during China’s fifth mandatory WTO trade policy review, and were again raised in response to China’s obstructive behavior in the Information Technology Agreement (ITA) negotiations, which further demonstrated its efforts to insulate domestic industries from competition.

China’s WTO Trade Policy Review: In 2014, China underwent its fifth WTO Trade Policy Review (TPR) since its 2001 WTO accession. While the official WTO report was mostly neutral in its description of China’s trade and investment policies, some statements within the TPR reflect several WTO members’ concerns about Chi-

^{*}AMSC continues to seek compensation from Sinovel through lawsuits in China. U.S.-China Economic and Security Review Commission, *2013 Annual Report to Congress*, November 2013, p. 248.

na's lack of transparency in forming and implementing trade-related policies. For example, the TPR was critical of the complexity and inconsistency of trade and investment catalogs, which China uses to specify those sectors that are eligible for preferential treatment in trade or are open to foreign investment.* The TPR said:

*It is not always clear how the different Catalogues should be read, as they sometimes overlap and even conflict, reflecting the different agendas at the different levels [of government]. The different layers of regulation add an additional level of difficulty when trying to unravel specific policy measures in China.*²³⁷

The TPR also stated that it is unclear how China subsidizes agricultural exports “since China has failed to notify [the WTO of] any agricultural support provided after 2008.”²³⁸ The review went on to say that “China retains a large number of support programs aimed at achieving its economic and social goals, but the WTO could not identify the full scope of these policies because they were often the result of “internal administrative measures.”²³⁹

During China's TPR proceedings, the United States was highly critical of China's lack of transparency in trade and investment-related policymaking. The United States described China's trade and investment practices as shrouded in a “systemic web of secrecy.”²⁴⁰ The United States accused China of failing to meet the transparency obligations that it agreed to upon accession to the WTO in 2001. Specifically, the Chinese government was inconsistent in notifying the WTO in advance of newly enacted policies that affect or distort trade, a requirement for WTO members.²⁴¹ The United States called China's subsidization of its domestic industries “widespread and massive.”²⁴² China did not respond directly to the United States' accusations, but said it would work to reply to questions as soon as possible.²⁴³

Information Technology Agreement (ITA): China continued to obstruct efforts to conclude a revised ITA in the WTO this year. During the latest negotiating round in June 2014, China failed to table a promised new offer amenable to the United States and other participants.²⁴⁴ Originally slated for conclusion last year, the ITA negotiations have stalled due to China's unwillingness to include key products such as multicomponent integrated circuits (MCOs) and flat-panel displays, and its insistence on lengthy tariff phase-out periods for other products.²⁴⁵ An updated ITA is considered an important component of early-harvest outcomes in the WTO Doha Round.²⁴⁶ The next meeting of the ITA Committee was scheduled for October 31, 2014, and the hope is still to reach an agreement by the end of the year.²⁴⁷

Trade in Services Agreement (TiSA): In September 2013, China asked to join multilateral negotiations toward a Trade in Services Agreement (TiSA), which began in May 2013 and have been spearheaded by the United States and EU Member states.²⁴⁸ In the

*China's “catalog” system is the opposite of the more widely used “negative list” approach, which only includes the sectors where foreign products or investors face restrictions.

aftermath of China's disruption in the ITA talks, some analysts speculate that allowing China to join the TiSA talks would be akin to inviting in a Trojan horse.²⁴⁹ The EU and Australia have welcomed China's bid to join the TiSA talks, arguing that liberalization of China's relatively small services sector would open more opportunities for trade and investment.²⁵⁰ However, China's procrastination in unilaterally liberalizing its services sector—a reform pledge it made in the Third Plenum—may be a signal that it is not committed to actual liberalization of services. Many of China's service industries are either highly consolidated into large SOEs, such as telecommunications, or highly fragmented and uncompetitive globally, such as logistics.²⁵¹ Information services, such as digitally transferable services, are heavily restricted because of China's control and censorship over the Internet. Only select service sectors in China, such as construction and shipping, are expected to be competitive globally.²⁵² These factors, combined with China's nontransparent political processes, raise serious concerns about including China in the TiSA talks.

Economic Aspects of China's Territorial Disputes

Territorial disputes between China and its neighbors have harmed commercial activity in the Asia Pacific and put at risk key U.S. interests in the region. In 2014, rising tensions surrounding these disputes have attracted global attention due to the large economic assets that are at stake around some of the territories, including key global trade routes, large oil and gas reserves, and fisheries. (Further analysis of China's territorial disputes is discussed in Chapter 2, Section 1, "Year in Review: Security and Foreign Affairs" and Chapter 3, Section 1, "China and Asia's Evolving Security Architecture.")

The locations of China's most sensitive territorial disputes are of strategic economic importance globally and to the United States. By the estimates of the U.S. Energy Information Administration (EIA), approximately 11 billion barrels of oil reserves and 190 trillion cubic feet of natural gas reserves lie in proved and probable reserves in the South China Sea.²⁵³ This equates to an approximate \$1.14 trillion in oil reserves and \$833 billion in natural gas reserves in the South China Sea.²⁵⁴ In addition, the EIA estimates that the East China Sea likely has approximately 200 million barrels of oil reserves and between 1 trillion and 2 trillion cubic feet in natural gas reserves, which equates to \$20.8 billion in oil reserves and between \$4.39 billion and \$8.77 billion in natural gas reserves.*^{255,256} Some Chinese sources claim undiscovered resources can run as high as 70 billion to 160 billion barrels of oil across the East China Sea.†

The South and East China Seas are also home to vast fisheries. The Food and Agriculture Organization of the United Nations esti-

*Calculations for oil reserves are based on a price of \$103.93 per barrel and for natural gas are based on \$4.27 per million British Thermal Units, MMBtu.

†Expert testimony delivered to the U.S.-China Economic and Security Review Commission in 2013 cast doubt on the feasibility of exploring and extracting these proven and probable reserves from the South and East China seas. For details, see the U.S.-China Economic and Security Review Commission's *2013 Annual Report to Congress*, Chapter 2, Section 3, "China's Maritime Disputes."

mates that the South China Sea produces 1.7 billion tons of fish, which accounts for over 10 percent of global fisheries production. The region is considered a key supply source for the fisheries sectors of Southeast Asian economies, a large portion of which are U.S.-bound exports.²⁵⁷

The South China Sea is also a key trading route. One hundred and seventy-two ports are located around the perimeter of the South China Sea, and approximately \$5 trillion of ship-borne trade (or nearly 30 percent of global trade) passes through the South China Sea every year.²⁵⁸ Annual U.S. trade through the South China Sea is valued at about \$1.2 trillion, which is nearly a quarter of overall U.S. trade.^{259,260} Should a crisis occur, the diversion of cargo ships to other routes would harm the global economy due to higher transport costs and longer shipping times.

Implications for the United States

China's preoccupation in 2014 with stimulating its economy to reach official GDP growth targets has been detrimental to the U.S. economy. China's "mini-stimulus," which continued to grow throughout the year, is causing investment to increase in sectors where overcapacity and oversupply are already problematic, such as steel. These subsidies encourage China to dump excess supply in overseas markets at below-market rates, putting U.S. manufacturers at a disadvantage.

Slow implementation of substantive economic reform has also been harmful to the United States. For example, U.S. businesses continue to face high market access barriers, including those for U.S. exports and investment. Separately, failure to transition to a floating exchange rate regime allows China to continue undervaluing its currency, thereby subsidizing Chinese exports, raising the cost of imports from the United States, and increasing the U.S.-China trade deficit. In addition, failure to accelerate privatization of sectors dominated by SOEs allows these companies, which are heavily subsidized by the government, to enjoy an unfair competitive advantage globally. China's slow path toward internal rebalancing and adopting a consumption-based growth model is also harmful to the United States. High levels of investment and savings rather than consumption by the Chinese keeps U.S. exports to China relatively low, which expands the U.S.-China trade deficit.

China's increasingly hostile foreign investment climate is also harming U.S. business interests. Beijing is using multiple tools—including its Anti-Monopoly Law and state-run media attacks—to discriminate against foreign invested firms. In addition, state-sponsored cyber theft of commercial IP and trade secrets has harmed U.S. businesses and the economy. China's obstructionist behavior in key multilateral trade negotiations, such as the Information Technology Agreement, has also inhibited the U.S. trade agenda.

Conclusions

- Despite U.S. exports to China growing by 6.2 percent, imbalances in the U.S.-China trade relationship increased in the first eight months of 2014 as the trade deficit grew by 4.1 percent. China stalled on liberalizing key sectors in which the United States is

competitive globally, such as services. Chinese foreign direct investment (FDI) flows into the United States grew, while U.S. FDI into China fell as foreign firms faced an increasingly hostile investment climate in China.

- Supported by government stimulus, China sustained economic growth at or near its official target rate of 7.5 percent through the first three quarters of 2014. Underlying economic problems in China, including oversupply of property and industrial overcapacity, continue to put economic growth at risk of further deceleration.
- China's chronic overcapacity, especially in sectors such as steel and solar panels, continued to harm U.S. manufacturing and exports by dumping excess supply into global markets.
- China's government made little to no progress this year in implementing the economic reforms designated by its leadership during the 2013 Third Plenum. Instead, Chinese President Xi Jinping and his leadership team focused on a broad anti-corruption campaign, while using stimulus to avoid further economic slowdown.
- While disposable income and consumption have increased relative to savings, China has not yet weaned itself off its traditional investment and export-based growth model, and continues to struggle with large internal imbalances.
- China's nontransparent policymaking came under criticism at the World Trade Organization, and China obstructed progress in key trade negotiations, such as the Information Technology Agreement. China's confrontational behavior in addressing contentious territorial disputes with neighboring countries also harmed economic and trade relations in the Asia Pacific.

Addendum I: Unresolved Trade Disputes with China

Issue	Last Action Taken	Summary of Dispute
China's Failure to Notify the WTO on Subsidies	The United States requested notification on Chinese subsidy programs in 2012 and 2014. There is no public record of China responding to the requests.	As noted in China's Fifth Trade Policy Review, China has a history of failing to report subsidies to the WTO, a requirement for all WTO members. China notified the WTO twice of subsidies in 2006 and 2011. In the latter case, the notification was made only after the United States issued a counter notification; however, China's notification only covered 93 subsidy programs from 2005 to 2008. The United States submitted requests for notification of Chinese subsidies in 2012 and 2014, but there is no public record of China responding to the requests.
Chinese Protectionist Measures on Auto Parts	The United States and China held consultations in November 2012 and are "engaging in further discussions." There is no public record of progress on the dispute since that time.	In 2012, the United States held consultations with China regarding auto parts export subsidies that appear to violate China's WTO obligations. The United States also accused China of failing to notify the WTO of the subsidies and failing to publish the measures as well as to provide translations in an official WTO language. There is no public record of further progress on the case or efforts to escalate the case to a Dispute Settlement Panel.
Subsidies to Chinese "Famous Brands"	In 2009, the United States and China came to an agreement in which China would eliminate a subsidy program to Chinese "famous brands."	In 2008, the United States and other WTO Member States challenged China for subsidies to producers of so-called Chinese "famous export brands." In December 2009, China agreed to eliminate the subsidy programs; however, Chinese "famous brands" subsidies have subsequently been reported, such as the one to a Chinese shrimp producer which became the basis of a 2013 U.S. countervailing duty.
Chinese Export Restraints	In April 2014, the United States won a case against China for export restraints on rare earths. Other export restraints have not yet been disputed.	Although prohibited by the WTO with limited exceptions, China maintains export restraints on several products, especially those deemed as strategic and emerging industries. In 2009, the United States and other WTO Member States lodged a dispute on export restraints of rare earths. In 2014, the WTO Dispute Settlement Body ruled against China; and an Appellate Body upheld the ruling. However, industry analysts report Chinese export duties on a broad range of other products which have yet to be disputed at the WTO.

Addendum I: Unresolved Trade Disputes with China—Continued

Issue	Last Action Taken	Summary of Dispute
Export Credits from China's Export-Import Bank	In 2012, the United States and China agreed to form a working group to establish guidelines on export financing by 2014.	Following U.S. industry complaints that China's Export-Import Bank provided export credits at below-market rates, the United States raised the issue of export financing with China in the 2011 U.S.-China Strategic and Economic Dialogue. Both sides agreed to form a working group to establish guidelines on export credits by 2014; however, reports from the European Union indicate that the scope of negotiations have been narrow, focusing on ships and medical equipment. To date, a dispute on Chinese export credits has not been raised at the WTO.
Localization Requirements	The USTR reports on-going discussions with China regarding localization requirements, such as of servers in the information and communication technology (ICT) sector.	China imposes localization requirements on several strategic and emerging industries as a means of acquiring foreign technology. For example, Internet companies that wish to provide services in China must establish a local presence, including servers, with a Chinese joint-venture partner. The USTR states in its annual report on China to Congress that it continues to discuss these localization requirements with China. To date, no formal dispute has been raised against China at the WTO.
Barriers to Trade in Digitally Distributable Services	In 2009, the WTO ruled partially in favor of the United States in a landmark dispute on trade in certain audiovisual services. China has yet to come into full conformity with the ruling.	The United States raised a case against Chinese barriers to the import of certain audio-visual services, and the WTO Dispute Settlement Panel ruled in favor of the United States in 2009. While China has come into partial compliance by permitting more imports of foreign-made movies, opaque Internet regulations in China continue to severely limit access for digitally distributable exports to China. The USTR submitted questions to China on its Internet censorship regulations in 2011, but the WTO has not published any response from China and a dispute settlement case has not been raised.
Market Access for Foreign Electronic Payment Services	China agreed to grant access to foreign suppliers of electronic payment services by July 2013, following a dispute panel decision that China's regulations were not WTO-compliant. To date, China has failed to grant market access.	In 2010, the United States raised a case against Chinese regulations that banned foreign suppliers of electronic payment services which are used to process credit card payments and other transfers among financial institutions. In 2012, the Dispute Settlement Panel found Chinese restrictions to be noncompliant, and China agreed to implement the Panel's recommendations by July 2013. To date, China has yet to authorize access to foreign suppliers, and there is no public record of further action on the dispute.

Source: WTO and USTR; compiled by Commission staff.

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SECTION 2: U.S.-CHINA BILATERAL TRADE AND ECONOMIC CHALLENGES

Introduction

The U.S.-China trade and economic relationship grows larger—and more unbalanced—with each passing year. China became the world's largest trading nation in 2013, overtaking the United States to register a record \$4.16 trillion in total exports and imports.¹ Like a mirror image of the United States, China's trade ledger was heavily weighted toward exports over imports. China enjoyed a global surplus of \$260 billion and a surplus with the United States of \$318.4 billion. As of the end of August, the U.S. trade deficit with China already stood at \$216 billion, about \$8.5 billion more than that time last year.² At this pace, the 2014 deficit will reach a historic high.

U.S. exports to China have grown—fourfold in the last decade—and China has become America's third largest export market, behind neighbors Canada and Mexico.³ The United States shipped \$120 billion worth of goods to China in 2013, a 7 percent increase over 2012.⁴ In 2014, U.S. exports to China also increased, totaling \$68 billion through the end of July, a 7 percent increase over the same period in 2013.⁵ But the value of imports from China still dwarfs the value of our exports to China.⁶ Americans turn to China to purchase computer and communications equipment, and apparel. China's main purchases from the United States are oil seeds, aircraft and parts, as well as waste and scrap. China thus has the benefit of selling more value-added goods, which tend to employ more workers at higher pay in the production process than does the marketing of commodities or lower value-added goods. Consequently, a growing percentage of the U.S. trade deficit also involves high-tech merchandise. The United States ran a \$116.8 billion deficit in advanced technology trade with China in 2013.⁷ In short, Chinese exports to the United States are contributing to an increasingly sophisticated labor market while U.S. exports to China are falling short both in volume and in labor market value. Table 1 and Table 2 show top U.S. imports from China and exports to China between 2009 and 2013.

Table 1: Total and Top U.S. Imports from China, 2009–2013
(US\$ millions)

Year	2009	2010	2011	2012	2013	Percent Change 2009–2013	Percent Change 2012–2013
Total Imports from China	296,402	364,944	399,335	425,644	440,434	48.5%	3.50%
Computer Equipment	44,818	59,800	68,276	68,815	68,123	51.9%	–0.10%
Communications Equipment	26,362	33,464	39,806	51,857	58,839	123%	13.50%
Miscellaneous Manufactured Commodities	30,668	34,168	32,672	32,644	32,440	5.7%	–0.60%
Apparel	22,669	26,603	27,554	26,926	27,410	21%	1.80%
Semiconductors and Other Electronic Components	12,363	18,263	19,835	19,012	19,363	56.7%	1.80%

Source: U.S. International Trade Commission DataWeb and Wayne M. Morrison, *China-U.S. Trade Issues* (Congressional Research Service, February 10, 2014).

Table 2: Total and Top U.S. Exports to China, 2009–2013
(US\$ millions)

Year	2009	2010	2011	2012	2013	Percent Change 2009–2013	Percent Change 2012–2013
Total Exports to China	69,576	91,878	103,879	110,590	122,016	75.4%	10.30%
Oilseeds and Grains	9,376	11,208	11,500	16,546	16,092	76.4%	–2.70%
Aerospace Products and Parts	5,344	5,766	6,392	8,367	12,620	36.4%	50.80%
Waste and Scrap	7,142	8,561	11,540	9,526	8,765	22.7%	–8.00%
Motor Vehicles	1,134	3,515	5,369	5,788	8,614	660%	48.80%
Navigational, Measuring, Electromedical, and Controlling Instruments	2,917	3,782	4,275	5,153	5,732	96.5%	11.20%

Source: U.S. International Trade Commission DataWeb and Wayne M. Morrison, *China-U.S. Trade Issues* (Congressional Research Service, February 10, 2014).

Meanwhile, a rapidly growing stream of Chinese direct investment is flowing into the United States, which currently totals \$35.9 billion. More than \$14 billion of this amount was contributed in 2013 alone, and \$8 billion in the first quarter of 2014.⁸ In 2014, the relationship between the two countries reached a milestone as

Chinese direct investment into the United States began to surpass U.S. direct investment into China.⁹ Despite this recent change, China is not among the top sources of foreign direct investment in the United States. The top nine sources—the United Kingdom, Japan, the Netherlands, Canada, France, Switzerland, Luxembourg, Germany, and Belgium—collectively account for more than 80 percent of the total stock of foreign direct investment in the United States, while China, with less than 1 percent, is just one of 150 other countries that collectively account for the remainder.¹⁰ However, China is the fastest growing source of foreign direct investment (FDI) globally, and in the United States, and its global outbound investment is expected to continue to grow exponentially in the years to come.¹¹

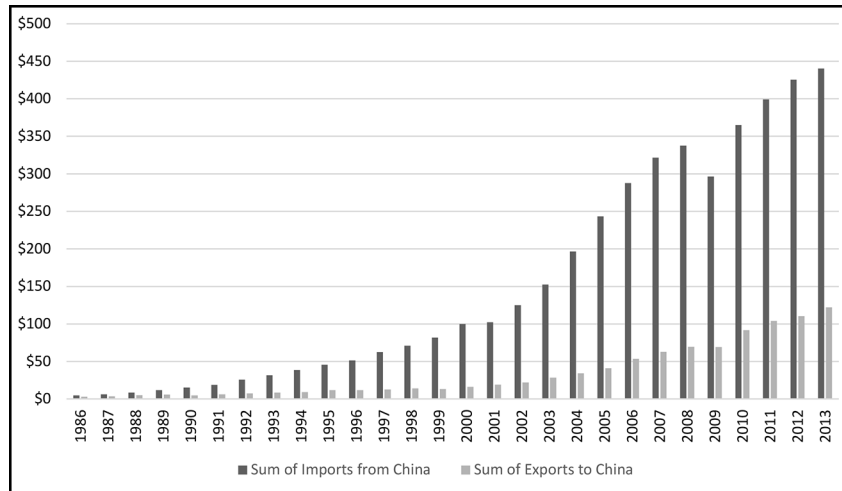
This section draws on the Commission’s February 21, 2014, public hearing on U.S.-China economic challenges. It advances the Commission’s continuing assessment of the impact of U.S.-China trade on U.S. employment and investment. It examines the effectiveness of U.S. diplomacy and the sufficiency of enforcement efforts in attempting to bring greater balance to the trading relationship. Finally, it assesses the motives and incentives driving Chinese investment in the United States and forecasts the potential impacts of this investment flow on U.S. labor markets.

The Impact of Bilateral Trade on U.S. Employment

Sizing up the Deficit

U.S.-China bilateral trade reached a new peak of \$562 billion in 2013, but China shipped nearly four dollars’ worth of goods to the United States for every dollar’s worth of imports it purchased from the United States.¹² The resulting U.S. trade deficit with China set a record for the fourth straight year.¹³ This deficit, non-existent three decades ago, is now the largest bilateral deficit in the world and three times the size of the second largest deficit, with Japan.¹⁴ Figure 1 illustrates the rise in the U.S.-China trade deficit between 1986 and 2013.

Figure 1: U.S. Trade Deficit with China: Annual 1986–2013
(US\$ billions)



Source: United States Census Bureau. <http://www.census.gov/foreign-trade/balance/c5700.html#2006>.

China's trade surplus in goods with the United States last year represented 41 percent of America's total global deficit in goods of \$703 billion.¹⁵ The size of the overall trade deficit—and the bilateral trade deficit with China in particular—is a perennial source of concern in the U.S. about “declining competitiveness, job losses, and unfair trade practices by Chinese companies.”¹⁶ In a February 2014 press release, Alliance for American Manufacturing President Scott Paul blamed the U.S. trade deficit with China for “a shrinking middle class” and “fewer good job opportunities,” and described the deficit as “further proof that our economic policies—including a lack of enforcement of existing trade laws—contribute to outsourcing.”¹⁷ A 2012 Gallup poll found that a majority of Americans (66 percent) believe the trade deficit with China is a major barrier in the bilateral relationship, and 52 percent of Americans see China's economy as a critical threat to U.S. vital interests in the future.¹⁸

Yet some economic theories support the opposite conclusion: that trade creates jobs overall when nations specialize in producing goods in categories where they enjoy an advantage due, perhaps, to an abundance of natural resources or transportation routes. Even where no actual advantage exists in any particular good, according to David Ricardo's classic economic theory a “comparative advantage” falls to the nation that is able to specialize in production.¹⁹ The Organization for Economic Cooperation and Development (OECD), for example, argues that “liberalized trade is an engine for job creation in all countries.”²⁰ The United States International Trade Administration (ITA) cites statistical evidence that exports supported the creation of 1.6 million jobs between 2009 and 2013. This perspective on trade, however, assumes that nations follow generally accepted international trade rules, are market ori-

ented and not dominated by state-owned enterprises, and that commercial ventures are not provided lavish government subsidies or government protection from imports. Such is not the case with China, whose longstanding industrial policies call for running large trade surpluses by discriminating against imports in favor of domestically produced goods.* China hurts the U.S. economy “by undermining our comparative advantage,” notes Derek Scissors, an economist at the American Enterprise Institute. He notes that China protects its domestic industries by blocking some U.S. exports. The Chinese government also “reserves large parts of its market for state-owned enterprises” which compete unfairly. Finally, as the world’s “biggest thief” of American intellectual property, China “undermines our biggest advantage in trade,” says Dr. Scissors.²¹

Economic Policy Institute economist Robert Scott told the Commission at its February 21 hearing that while exports support U.S. jobs, imports undermine jobs in import-sensitive industries and in related industries. Thus, Scott contends, while trade can create jobs, it is “the trade balances—the net of exports and imports—that determine the number of jobs created or displaced by trade agreements.” Dr. Scott argues that if liberalized trade relations do not raise exports more than imports, there will not be a net job gain.²² Although the extent to which growing bilateral trade deficits have shifted jobs from the United States to China is unclear, Dr. Scott believes as many as 2.4 million American jobs have been lost or displaced as a result of China joining the World Trade Organization (WTO) in 2001.²³ This would represent a significant portion of the 3.6 million reduction in manufacturing jobs in the United States since December 2001.²⁴

Other economists disagree as to the extent to which trade with China is responsible for U.S. job losses. According to the Chicago Council’s Philip Levy, equating a given value of trade with a given number of jobs is a “popular—and deeply flawed—shortcut.” He points out that Dr. Scott’s analysis assumes any imports that did not come from China would be replaced with U.S. production even though there is much reason to believe that production would simply shift to other countries where it could be done more cheaply than it can be done here at home.²⁵ But Dr. Scott is not an outlier in his conclusion that the economic relationship has cost American jobs, especially in the manufacturing sector. Yale economist and Commission witness Peter Schott published a National Bureau of Economic Research study in 2013 demonstrating that closer trade relations with China have depressed American manufacturing job growth.²⁶ Dr. Schott’s findings are corroborated by an earlier study led by Massachusetts Institute of Technology economist David Autor, which found that “increased exposure to low-income-country imports [such as those from China] is associated with rising unemployment, decreased labor-force participation, and increased use of disability and other benefits, as well as with lower wages.”²⁷ Yet even as some critics decry the costs of U.S.-China trade, proponents counter that China is a source of affordable goods for American

*For further descriptions of China’s industrial policies, see the U.S.-China Economic and Security Review Commission’s *2012 Annual Report to Congress*, Chapter 1, Section 3, “The Evolving U.S.-China Trade and Investment Relationship,” p. 82.

consumers, which raises their buying power. Proponents of trade agreements with China also note China's growing significance as an export market for U.S. goods, and the opportunities for U.S.-based companies to invest in the Chinese market. In 2013 alone, U.S. companies invested \$3.4 billion in China.*

Gross vs. Value-Added Measurements of Trade

One view is that different stories are borne out by different calculations. The WTO and the OECD argue that traditional trade data distorts our understanding of bilateral trade balances.²⁸ They advocate the use of value-added measurements of trade, which have the effect of reducing the U.S. trade deficit with China. This accounting methodology was highlighted in the February 21 hearing discussion of value added, a topic that has garnered growing attention in recent years and was taken up in depth by the Commission in 2012.† Whereas traditional measurements of trade attribute the entire value of a good to the country in which it last underwent processing, value-added measurements account specifically for the value contributed to the good while in that country. Although China is the final assembly place for many goods exported to the United States, it often adds comparatively little value to those goods. Applying value-added measurements to the bilateral trade relationship could reduce the perceived deficit with China by approximately 25 percent, according to the WTO and the OECD.²⁹ These measurements particularly impact perceptions where high-tech goods are concerned, because technology goods tend to be high-value, but China may add only marginal labor-assembly value to the high-tech goods it exports.³⁰

Because value-added measurements of the deficit portray the trade imbalance as much smaller than is suggested by traditional measurements, it might be assumed that the damage sustained by the U.S. labor market has been overstated as well. But value-added measurements of trade do not alter the overall trade deficit. They merely reapportion responsibility among the surplus countries. Regardless of how the bilateral trade balance is measured, U.S. employment in some sectors has clearly declined as trade with China has increased. The negative impact the trade relationship has had on employment in those sectors is not diminished by the lower deficit estimates that value-added measurements produce. In fact, as Dr. Schott noted, in the U.S. manufacturing sector, value added has increased even as employment has declined. This means the percentage of total value a country adds to its goods is not necessarily a reflection of the health of its labor market.³¹ U.S. manufacturers appear in some instances to have increased value added by applying more efficient technologies and simultaneously cutting workers—reducing jobs while increasing their share of the total production process precisely to improve their ability to compete

* See "China 2013 Foreign Investment Inflows Hit Record High," Reuters, January 16, 2014. <http://www.reuters.com/article/2014/01/16/us-china-economy-fdi-idUSBREA0F0E120140116>; Derek Scissors, *The U.S. and China: Jobs, Trade, and More* (Heritage Foundation, October 11, 2012). <http://www.heritage.org/research/reports/2012/10/the-us-and-china-jobs-trade-and-more>; and "Shades of Grey: Ten Years of China in the WTO," *The Economist*, December 10, 2011. <http://www.economist.com/node/21541408>.

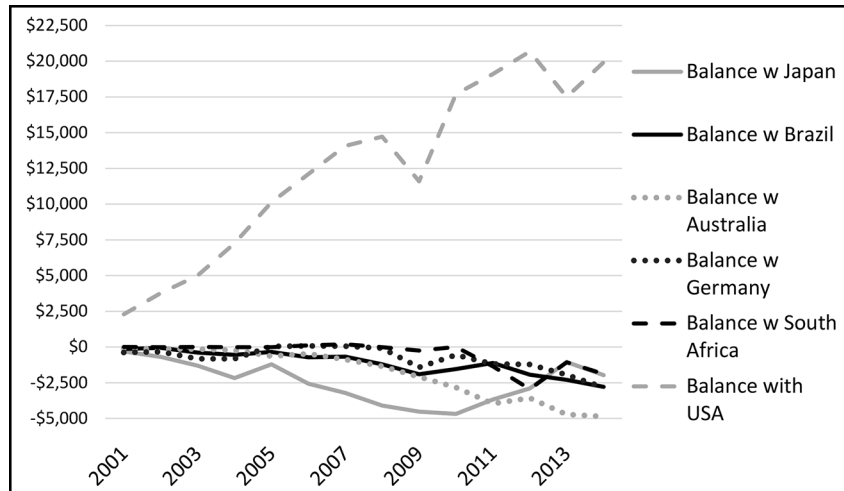
† See the U.S.-China Economic and Security Review Commission's *2012 Annual Report to Congress*, Chapter 1, Section 3.

with China.³² Furthermore, increased value added is often achieved by more skilled and more highly paid workers, so these developments have been a boon to some American workers, but they have nevertheless translated to fewer American jobs overall.

Permanent Normal Trade Relations (PNTR) and China’s WTO Accession

Some analysts maintain that a contributing factor in the development of the trade imbalance was the decision to allow China to join the WTO in 2001 without making it first fully commit to removing all barriers to imports.* While U.S. manufacturing employment has long been in decline, and has dropped 34 percent from its peak in the 1970s, China’s WTO entry and initial membership years coincided with a particularly precipitous dip.³³ Dr. Schott noted in his testimony that there was an 18 percent drop in U.S. manufacturing employment from March 2001 to March 2007. Dr. Scott calculates that “since China entered the WTO in 2001, job losses have increased to an average of 353,000 per year.”³⁴ China currently holds bilateral trade deficits with Australia, Germany, and Japan.³⁵ The European Union’s trade deficit with China declined from \$236 billion in 2008 to \$182 billion in 2013.³⁶ Yet, China’s trade surplus with the United States continues to grow. Figure 2 illustrates the growth of the U.S. trade deficit with China over time, as compared to surpluses with China maintained by developed nations on each of the other continents.

Figure 2: China’s Monthly June Bilateral Trade Balance with the United States vs. Other Developed Nations, 2001-2014
(US\$ millions)



Dr. Schott’s research indicates that the U.S. decision to grant permanent normal trade relations (PNTR), which paved the way for China to join the WTO and receive most-favored nation status

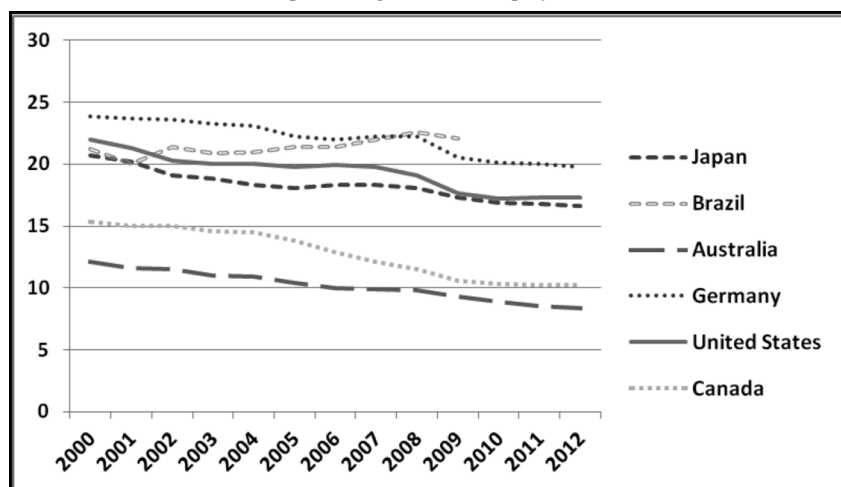
* See for example David Shambaugh, *China Goes Global: The Partial Power* (New York, NY: Oxford University Press, 2013).

(MFN),* led to the 18 percent U.S. employment drop in the ensuing years. According to Dr. Schott, a clear correlation exists between the jobs dip and the U.S. granting PNTR to China, which preceded China's entry into the WTO.³⁷ Once China had permanent MFN status and WTO membership, the yearly voting requirement ended, and U.S.-based corporations could invest in China with confidence that Congress would not revoke China's MFN status, which would have raised tariffs on Chinese exports to the United States. With the uncertainty removed, foreign investment in China climbed dramatically, funding foreign-invested factories and jobs producing exports bound for the United States and Europe. In 2012, China surpassed the United States to become the world's top destination for FDI.³⁸ FDI into China rose from \$40 billion per year in 1999³⁹ to \$95 billion in 2009 and \$117.59 billion in 2013.⁴⁰ Since China joined the WTO, foreign-invested enterprises have accounted for between 45 and 60 percent of Chinese exports annually.⁴¹ In recent years, the United States has consistently ranked as China's fifth-largest source of FDI, behind Hong Kong, Taiwan, Singapore, and Japan. China's Ministry of Commerce reported U.S. FDI into China of \$3.35 billion in 2013.⁴² In 2013, an estimated 55 percent of all exports from China to the United States were from foreign-invested enterprises—80 percent in the case of advanced technology products.⁴³

As Chinese imports rose, U.S. employment fell across a range of manufacturing sectors, but this impact was most dramatic in those U.S. industries where tariffs had previously stood to rise most significantly if Congress did not renew annual MFN rates. According to Dr. Schott, it was this "ending of the possibility of sudden spikes in Chinese import tariffs that likely strengthened import competition and suppressed U.S. employment growth."⁴⁴ Dr. Schott notes that the "very large" decline in U.S. manufacturing was more precipitous in the 2001 to 2007 period than in response to the 2008 international economic crisis.⁴⁵ "In absolute levels, manufacturing employment is kind of sideways until you get to about (2001) and then it falls off a cliff," he testified. Figure 3 indicates the declines in the percentage of manufacturing employment since 2000 in several of China's major trading partner countries.

* MFN or PNTR, as it came to be known. China was provided permanent most-favored nation status by Congress as part of its successful efforts to negotiate the terms of its entry into WTO membership. Previously, the administration could grant temporary MFN status each year under the terms of the Jackson-Vanik Amendment (Section 401, Title IV of the Trade Act of 1974, P.L. 93-618) that governed U.S. trade relations with communist countries that restrict freedom of emigration and other human rights. While successive administrations granted China annual waivers from the Jackson-Vanik Amendment, Congress each year debated rescinding the waiver, as provided for in the Amendment. The debate in Congress became particularly heated after the 1989 massacre of students and prodemocracy protestors at Tiananmen Square. But Congress never succeeded in revoking the administration's yearly grant of temporary MFN status to China. After a debate in which supporters championed the benefits of China's WTO accession, the House approved PNTR for China on May 24, 2000. The Senate gave its approval in September 2000.

Figure 3: Comparative Declines in Manufacturing Jobs in Countries Trading with China, 2000–2012
(as percentage of total employment)



Source: "Brazil: Distribution of Employment by Economic Sector from 1999 to 2011," Statista. <http://www.statista.com/statistics/271042/employment-by-economic-sector-in-brazil/>; Federal Reserve Bank of St. Louis.

The granting of permanent MFN status also had three other effects which drove down employment in the United States, according to Dr. Schott. China's new MFN status encouraged more U.S. businesses to outsource their manufacturing to Chinese subcontractors. This trend was already underway in low value-added manufacturing, such as clothing and shoes, but it accelerated, particularly in the field of electronics. In addition, Chinese manufacturers were also reassured by the granting of permanent MFN status that they could count on the United States as a more reliable market. With the advantage of lower labor costs, lower costs of capital due to below-market rate loans from state-owned banks, and with other government tax inducements to export, Chinese manufacturers responded to the call to increase exports.⁴⁶

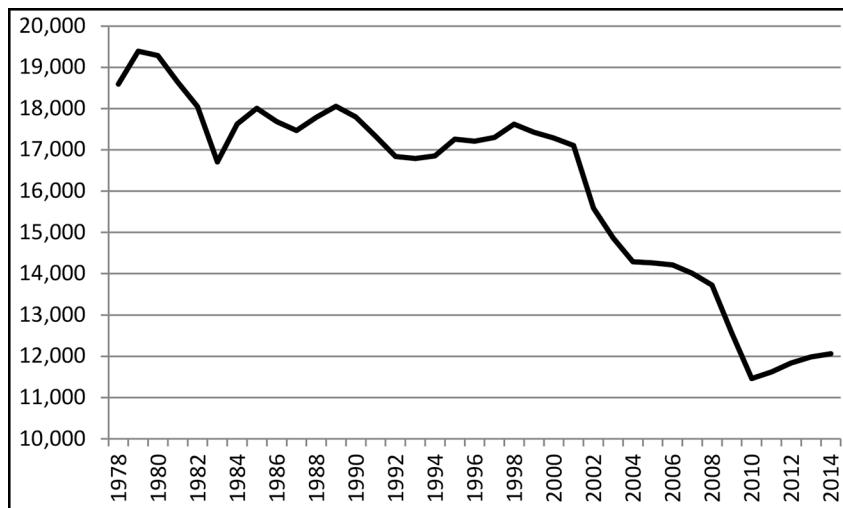
Finally, U.S.-based manufacturers who elected to maintain production in the United States felt comfortable doing so if they were able to cut production costs in domestic plants—often by automating to reduce labor costs. "U.S. manufacturers both used technology that substituted away from workers to make the things that they were making before, but they also substituted out of labor intensive manufacturing and into the higher-value-added [sectors] that you think the U.S. has a comparative advantage in, as is completely predicted by most views of trade," said Dr. Schott.⁴⁷

Among other indirect causes of declining employment in U.S. manufacturing brought on by China's WTO membership were the provisions for limiting foreign investment in certain manufacturing operations in China, according to the testimony of Oded Shenkar, an Ohio State University economist who has studied the effects on the U.S. automobile industry of trade with China. Dr. Shenkar pointed to a Chinese prohibition on majority ownership of auto

plants in China as one cause for U.S. job losses. The prohibition facilitated Chinese efforts to obtain process technology in vehicle manufacturing because foreign firms interested in participating in the Chinese auto industry were forced to bid on the chance to become minority shareholders in joint ventures with Chinese companies, often with contractual obligations to share their technology with the Chinese partner and to assist the partner in developing a Chinese car brand. “The Chinese have done a remarkable job of absorbing this technology ... and they are now ready to take it to the next level,” he said. “We are entering an imitation age, meaning that it is easier to imitate, it is more beneficial to imitate.”⁴⁸ As a result, China has quickly developed a sophisticated vehicle manufacturing capability that could supply most of the Chinese market without imports from North America or Europe.

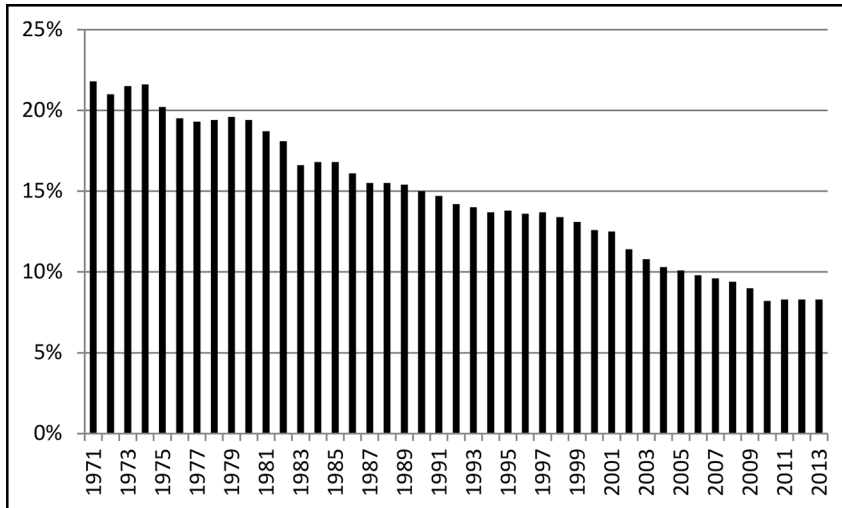
Figure 4 and Figure 5 show the decline of U.S. manufacturing jobs and the growth of the U.S. trade deficit with China since the late 1970s. As a percentage of total U.S. employment, manufacturing jobs have dropped from 21.8 percent in 1971 to 8.3 percent in 2013.⁴⁹ Figure 6 shows how the U.S. trade deficit with China has grown over time.

Figure 4: U.S. Manufacturing Jobs in Thousands, January 1978–January 2014



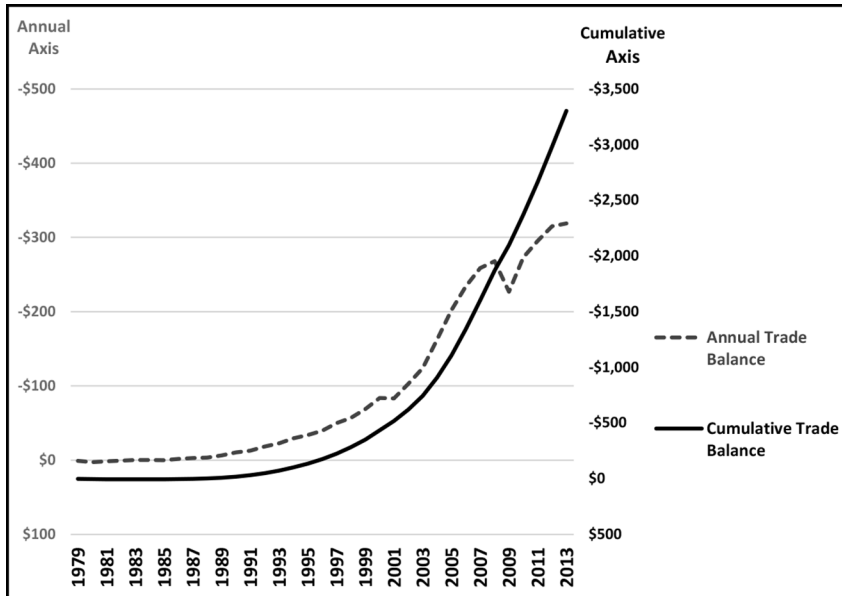
Source: U.S. Bureau of Labor Statistics.

Figure 5: Manufacturing as a Percentage of Total U.S. Employment, 1971–2013



Source: U.S. Bureau of Labor Statistics.

Figure 6: U.S. Trade Balance with China, 1979–2013
(US\$ billions)



Source: 1979–1984 numbers from International Monetary Fund, via China Business Review, March–April 1985; 1985–2013 (through November) numbers from U.S. Census Bureau.

Managing the Bilateral Trade Relationship

When China joined the WTO in 2001, Beijing committed to sweeping reforms, which required “changes to hundreds of laws, regulations, and other measures affecting trade and investment,” according to the office of the U.S. Trade Representative (USTR).⁵⁰ China’s very motivation for joining the WTO was “rooted in the realization that it needed an external impetus to overcome domestic obstacles to further reforms . . . if it was to sustain the rapid economic growth of the 1980s and 1990s,” according to supporters of China’s WTO entry.⁵¹ But in 2003, the Hu Jintao leadership came to power and began emphasizing increased state involvement in the economy, leading to institutionalized preferences for state-owned enterprises and other state interferences that conflicted with the market reforms envisioned by the United States as well as other trading partners, and promised by China itself. The report from the Third Plenum calls for the market to play a “decisive role” in the allocation of resources in the economy, rather than the “fundamental role” it has previously been allocated. But thanks to the policies of the Hu Jintao era, China has already solidified its role as the workshop to the world, according to David Shambaugh, director of the China policy program at the George Washington University. Says Dr. Shambaugh:

*Currently, it is the world’s largest producer of household and office furniture sets, machine tools, lubricant oils, lithium ion batteries, Christmas ornaments, footwear, cameras, computers, televisions, tape recorders, instrumentation, cloth and nylon fibers, textiles, plastics, stainless steel, washing machines, watches, mobile phones, and other consumer durables. In 2014 China is projected to overtake Australia as the world’s largest wine producer by volume.*⁵²

According to a 2012 report from the Information Technology and Innovation Foundation, “While virtually all governments have crafted economic development policies to boost competitive advantages, China has developed the most comprehensive set of policies, with most of them violating the spirit, if not the letter of the law of the WTO.”⁵³ Currency manipulation, subsidies, tariffs, forced technology transfers, export restrictions, manipulative standard setting and other policies have been used to “gain an absolute advantage” for Chinese companies across a wide array of industries, to the detriment of competitors in the United States and globally.⁵⁴ While the WTO membership committed China to adopt free market policies, its divergence from WTO rules and principles benefited China at the expense of its rule-following trading partners.

The United States has relied on a combination of dialogue and enforcement efforts to try to address the range of problems arising from Chinese state capitalism and to encourage China to uphold its WTO accession commitments. Washington has pressed 15 of the 31 WTO cases brought against Beijing to date, more than twice as many as any other WTO member.⁵⁵ (For a detailed list of pending cases before the WTO involving the United States and China, see Chapter 1, Section 1, “Year in Review: Economics and Trade.”) In addition to these enforcement efforts, high-level diplomatic engage-

ments are scheduled throughout each year in the form of the biannual meetings of the Joint Commission on Commerce and Trade (JCCT), the annual meetings of the Strategic and Economic Dialogue (S&ED), and a host of related meetings. In many respects, however, these efforts have been ineffective, as underscored by the annual reports to Congress on China’s WTO compliance, in which the Office of the United States Trade Representative highlights many of the same issues year after year.*

Dialogues—All Talk, Little Action

The JCCT was established in 1983 to focus on bilateral economic issues, and the S&ED was launched in 2006 (originally as the Strategic Economic Dialogue), to serve as a bilateral framework for managing a wide array of political, economic, and security issues. These dialogues are intended to act as information-sharing forums and to facilitate reciprocity and collaboration.⁵⁶ They provide structure to the bilateral relationship, offering “a degree of assurance that diplomatic relations will not be allowed to regress beyond a certain point.”⁵⁷ Face-to-face meetings are supposed to grease the wheels for collaborative action, and in the last decade, the number of meetings has proliferated as both sides have identified more and more issues in need of attention. The JCCT includes at least 13 trade-related dialogues and working groups, four devoted to intellectual property rights, and seven that are sector specific, while the S&ED has at least 30 working groups and dialogues of its own.⁵⁸ Figure 7 and Figure 8 show the range of trade and economic working groups and dialogues associated with the JCCT and S&ED, respectively.

Figure 7: Working Groups and Dialogues of the Joint Commission on Commerce and Trade

Working Groups that Meet Throughout the Year	
Agriculture	Pharmaceuticals and Medical Devices
Commercial Law	Sanitary and Phytosanitary
Environment	Statistics
High Technology and Strategic Trade	Steel
Industries and Competitiveness	Structural Issues
Information Industry	Trade and Investment
Insurance	Trade Remedies
Intellectual Property	Travel and Tourism
Additional Known JCCT Working Groups and Dialogues that Meet or Have Met Irregularly	
Trade	Intellectual Property Rights
Transparency Dialogue	Intellectual Property Rights Law Enforcement Group
Trade Remedies Working Group	Intellectual Property Rights Criminal Enforcement Working Group
Antimonopoly Dialogue	
Commercial Law Working Group	

*Prepared pursuant to section 421 of the U.S.-China Relations Act of 2000 (P.L. 106-286), 22 U.S.C. §6951, which requires USTR to report annually to Congress on China’s compliance with commitments made as part of its 2001 accession to the WTO, including multilateral commitments and bilateral commitments made to the United States.

Figure 7: Working Groups and Dialogues of the Joint Commission on Commerce and Trade—Continued

Additional Known JCCT Working Groups and Dialogues that Meet or Have Met Irregularly	
Trade	Intellectual Property Rights
Structural Issues Working Group Business Development and Industrial Cooperation Working Group Telecommunications Dialogue Insurance Dialogue Industries and Competitiveness Dialogue Broadband Wireless Internet Protocol Standard Group Statistics Working Group High Technology and Strategic Trade Working Group Statistics Working Group Industrial and Innovation Policies Dialogue	Government SOE Procurement Group Intellectual Property Rights Working Group on Software Legalization
	Sectors Agricultural Trade Working Group Textiles Consultative Group
	Travel and Tourism Working Group Information Industry Working Group
	Steel Dialogue Joint Liaison Group on Law Enforcement

Figure 8: Economic Track Working Groups and Dialogues Under the Strategic and Economic Dialogue

S&ED Economic Track Pillars	
Macroeconomic Cooperation Global Economic Governance Trade and Investment Financial Markets	
Additional Known S&ED Economic Track Working Groups and Dialogues that Meet or Have Met Irregularly	
Energy	Other
Climate Change Policy Dialogue Energy Policy Dialogue Ten-Year Framework Joint Working Group U.S.-China Energy Efficiency Forum Renewable Energy Forum Advanced Biofuels Forum	Anticorruption Group Investment Forum Policy Planning Dialogue Initiative on City-level Economic Cooperation U.S.-China Governors Forum to Promote Sub-national Cooperation
Regional	Quasi-independent
Africa Dialogue Central Asia Dialogue Latin America Dialogue South Asia Dialogue	Joint Experts Dialogue on Rules of Origin Annual Labor Dialogue High-level Consultation on People-to-People Exchange Healthcare Forum Joint Financial Committee

Sources: Derek Scissors, *Tools to Build the U.S.-China Economic Relationship*, Backgrounder No. 2590 (Heritage Foundation, August 8, 2011); *United States has Secured Commitments in Key Bilateral Dialogues, but U.S. Agency Reporting on Status Should be Improved*, Report to Congressional Requestors, United States Government Accountability Office, February 2014. <http://www.gao.gov/assets/670/660824.pdf>.

Critics argue the meetings have become “glorified talk-shops” that do not produce real progress. Dr. Scissors has criticized the S&ED and its subordinate institutional arrangements as ineffective tools that seem to have evolved “haphazardly over time” rather than having been consciously designed.⁵⁹ He notes an “incoherent proliferation of groups and discussions,” which “appear to have no logical relationship whatsoever.”⁶⁰ As these sub-level engagements continue to multiply, Dr. Scissors says that they “have become the cover story for the failure to act on fundamental matters—that is, nothing was accomplished but the two sides agreed to create several more working groups.”⁶¹ A February 2014 study by the U.S. Government Accountability Office (GAO) lends credence to his critique. The GAO identified 298 trade and investment commitments made by China through the various JCCT and S&ED dialogues since 2004, but was unable to determine the extent to which any of them had been fulfilled due to poor tracking by U.S. government agencies.⁶² The report concluded that “more comprehensive reporting would give Congress and other policy makers a clearer understanding of progress and the role of the dialogues as they continue to assess challenges in the U.S.-China relationship.”⁶³

Enforcement Efforts

In all, the Obama Administration has brought more than twice as many trade enforcement cases against China as did the previous Bush Administration, stepping up efforts to enforce China’s agreements.⁶⁴ The current Administration has filed eight requests for WTO consultations* with China to date, and has alerted the WTO to the existence of 200 Chinese subsidy programs that Beijing failed to disclose to the WTO as required by Article 25 of the WTO Agreement.⁶⁵ It is the first administration to enforce the Section 421 China-specific safeguard, an import relief mechanism aimed at protecting U.S. industries and workers in the event of import surges from China.†⁶⁶ It also accepted a Section 301 petition on China’s funding and protection of its clean energy industries, resurrecting a trade enforcement tool that has largely lain dormant in recent years.‡⁶⁷

Despite these efforts “violations continue and our trade relationship grows more lopsided each year,” according to Elizabeth Drake an expert on international trade at the Washington law firm Stewart and Stewart. Ms. Drake cited “problems such as WTO-illegal and trade-distorting subsidies, discrimination against U.S. goods, services, and technologies, localization requirements, inadequate protections for intellectual property and more.”⁶⁸ One particularly acute problem, according to Ms. Drake, is that when issues are politically sensitive, the United States too often chooses dialogue

*A consultation request is the first step in filing a formal complaint in the WTO.

†Section 421 of the Trade Act of 1974 as amended allowed the United States to apply safeguard measures targeted exclusively at Chinese products, an exception to WTO rules that was available to counter Chinese import surges until it expired on December 11, 2013 in accordance with provisions of the U.S.-China WTO agreement.

‡According to the International Trade Administration, Section 301 of the Trade Act of 1974 as amended is “the principal statutory authority under which the United States may impose trade sanctions on foreign countries that either violate trade agreements or engage in other unfair trade practices. When negotiations to remove the offending trade practice fail, the United States may take action to raise import duties on the foreign country’s products as a means to rebalance lost concessions.”

rather than enforcement action, and the problem festers when the dialogue fails to deliver. She cites China's undervaluation of its currency as a prime example of a problem that creates major distortions in our trade relationship and yet continues to go unresolved because of a lack of enforcement action on the part of the U.S. government.⁶⁹

The Currency Problem—A Case Study

By artificially suppressing the tendency of a currency value to rise in an economy running a large trade surplus, China is able to avoid the compensatory pressures of a higher renminbi (RMB) that would otherwise make its exports more expensive and imports cheaper. By counteracting the compensatory forces that would tend to level the playing field in international trade, China has "gained a substitute for the mercantilist measures it gave up to join the WTO," according to Ms. Drake.⁷⁰

China has made little effort to conceal the way it deliberately stymies market forces to keep the RMB from appreciating. As a matter of policy, China tightly pegged its currency's value to that of the dollar from 1995 to 2005, at a rate of slightly more than 8 RMB per dollar. In July 2005, the government announced a policy of allowing the RMB to trade within a narrow margin compared to an unspecified "basket of currencies." The RMB gradually appreciated 21.2 percent against the U.S. dollar even as China's bilateral trade surplus continued to climb.⁷¹ From July 2008 through July 2010, the RMB was again pegged to the U.S. dollar. In July 2010, China announced a return to a "managed float" exchange rate system in which some flexibility was tolerated during the trading day, but the RMB-to-dollar ratio was reset at the start of each trading day.⁷² Between July 2010 and October 2013, the RMB appreciated 12 percent against the U.S. dollar, and by the end of 2013, it had appreciated roughly 45 percent in inflation adjusted terms since China began its currency reform efforts in 2005.⁷³ The currency exchange rate is now at about 6.2 RMB per dollar.⁷⁴

The International Monetary Fund estimates that the RMB remains "moderately undervalued" by "about 5 to 10 percent on a real effective basis, as of August 2014."⁷⁵ There is no universally accepted method of calculating the extent to which a currency is undervalued, and some experts argue that the RMB may still be depressed by as much as 20 percent.⁷⁶ In 2014, the U.S. Treasury Department reiterated its longstanding assessment that China's currency is "significantly undervalued."⁷⁷

China is not alone in seeking to gain an export advantage by undervaluing its currency. Fred Bergsten and Joseph Gagnon of the Peterson Institute for International Economics note that more than 20 countries have intervened in international currency markets in a variety of ways, trading currencies at an average rate of nearly \$1 trillion annually "in order to keep their currencies undervalued and thus boost their international competitiveness and trade surpluses."⁷⁸ They calculate that the United States has lost between 1 million and 5 million jobs as a result of currency manipulation globally.

The largest loser [where currency undervaluation is concerned] is the United States, whose trade and current account deficits have been \$200 billion to \$500 billion per year larger as a result. . . . Half or more of excess U.S. unemployment—the extent to which current joblessness exceeds the full employment level—is attributable to currency manipulation by foreign governments. . . . Eliminating excessive currency intervention would narrow the U.S. trade deficit by 1 to 3 percent of GDP and would thus move the U.S. economy much of the way to full employment, with an even larger effect possible once multiplier effects on domestic demand are taken into consideration.⁷⁹

Dr. Bergsten and Dr. Gagnon's data show that China is far and away the most significant currency intervener, "in terms of both economic importance and amounts of intervention."⁸⁰ China's lower currency valuation functions as a de facto subsidy, giving its exports a price advantage vis-à-vis domestically produced goods in the U.S. marketplace and vis-à-vis U.S. products globally. Experts, including Dr. Scott, contend that this translates to artificially high demand for Chinese manufactured exports and the movement of U.S. manufacturing jobs overseas. According to Dr. Scott, China's currency manipulation has led to the loss of 3 million U.S. jobs since China joined the WTO in December 2001, more than three-fourths of them in the manufacturing sector.⁸¹ If China were to value its currency fairly, 2.3 to 5.8 million U.S. jobs would be created, he says.⁸²

President Obama has said that China's undervaluation of its currency puts American firms at a "huge competitive disadvantage," and in 2010 he made the issue a top policy priority in dealings with China, devoting most of a two-hour meeting with Chinese Prime Minister Wen Jiabao to underscoring currency concerns.⁸³ As recently as March of 2014, the president urged his Chinese counterpart to move the RMB toward a more market-based exchange rate.⁸⁴ The last time the U.S. Treasury Department branded China a currency manipulator was in 1994, and successive administrations, including that of President Obama, have consistently declined to label China a currency manipulator in biennial reports to Congress. Naming China would have elevated the issue diplomatically by requiring the Treasury Department to initiate negotiations on the issue with China. (Since at least 2003, the United States has raised the issue in other annual bilateral talks such as the Security and Economic Dialogue.)⁸⁵ Though there would be no other direct impact, Congressional proponents believe that naming China as a currency manipulator is needed. Meanwhile, the Treasury Department has unofficially cited a variety of reasons not to, among them: (1) high pressure would make the Chinese government less likely to respond because to do so would embarrass officials; (2) China has allowed the RMB to gradually appreciate during certain periods and is therefore moving toward compliance, albeit slowly; (3) Chinese officials have secretly promised to do so once the economy is stabilized; and (4) the issue in China is simply too sensitive so officials are unable to act.⁸⁶

To date, the Commerce Department has also refused to treat currency undervaluation as an indirect export subsidy, a ruling that

could lead to penalty tariffs on certain imports from China, thereby boosting the competitiveness of domestic alternatives.⁸⁷ A number of U.S. countervailing duty petitioners have asserted claims against China's currency policy as an actionable subsidy under U.S. law. However, the Commerce Department has not officially included undervalued currency as part of a countervailing duty investigation. There is also debate over whether such an action would be consistent with U.S. law and WTO rules. In two 2010 cases involving aluminum and coated paper producers, the Commerce Department found that currency undervaluation did not constitute a domestic subsidy specific to a particular company, industry, or group of companies or industries, as is statutorily required for Commerce to initiate an investigation. Both U.S. law and WTO regulations define subsidies as financial contributions from a government benefiting a specific industry.⁸⁸ Bills to address China's currency policy have been introduced during every session of Congress since 2003. While none of these bills has yet become law, during the 111th Congress, the House passed the Currency Reform for Fair Trade Act (H.R. 2378) by a vote of 348 to 79. During the 112th Congress, the Senate passed the Currency Exchange Rate Oversight Reform Act of 2011 (S. 1619) by a vote of 63 to 35.⁸⁹ There remains significant support in the House and Senate to require the Commerce Department to treat currency undervaluation as a subsidy. In September 2013, a bipartisan group of 60 senators signed a letter calling for action on the Chinese currency issue as part of the United States' Trans-Pacific Partnership negotiations.⁹⁰ Various other proposed bills would require greater action by the executive branch to address China's currency manipulation, or would define currency manipulation as an illegal subsidy and would make China and other transgressor nations subject to penalty duties.* However, gradual appreciation of the RMB and strong opposition from the U.S. business community and the Administration have thwarted the passage of legislation. The United States has also declined to challenge China's currency valuation practices at the WTO, though that, too, is a potential enforcement tool at our disposal.⁹¹

Some insist that currency undervaluation is not as serious a problem as critics of China's policy contend. Edward Lazear, former chairman of the President's Council of Economic Advisers during the George W. Bush Administration (2006–2009), points out that Chinese exports to the United States do not track closely with currency movements, evidence he cites to claim that currency undervaluation is not a key factor in determining trade patterns. Dr. Lazear notes that between 1995 and 2005, when the dollar-RMB exchange rate was stagnant, Chinese exports to the United States increased sixfold, or 19.6 percent per year. Between 2005 and 2008, when the RMB's value relative to the dollar appreciated roughly 21

*Bills to address China's currency manipulation in the 113th Congress have included: H.R. 1276: The Currency Reform for Fair Trade Act, which would seek to clarify that the Commerce Department can consider a "fundamentally misaligned currency" as an actionable subsidy, and S. 1114: The Currency Exchange Rate Oversight Reform Act of 2013, which specifies criteria for identifying fundamentally misaligned currencies and would require action to correct misalignment where certain "priority" countries are concerned. Both bills are essentially identical to legislation proposed but not passed in previous Congresses. For more detailed information on these and older legislative proposals to address Chinese currency valuation, see Wayne M. Morrison, "China's Currency Policy: An Analysis of the Economic Issues." <https://www.fas.org/sgp/crs/row/RS21625.pdf>.

percent, Chinese exports to the United States should have fallen if there were a strong correlation between trade and currency valuation. Instead Chinese exports “continued to grow at about the same pace, averaging 18.2 percent per year.”⁹² *Forbes Magazine* contributor Dan Ikenson echoes Lazear’s argument, noting that “the U.S. economy has ‘created’ more jobs in periods when the trade deficit was growing than in periods when it was shrinking.”⁹³ Dr. Scissors agrees, noting that “jobs have been lost by the millions over the past three years, while the yuan has either held steady or been rising against the dollar.”⁹⁴

Even if U.S. employment rates are affected by China’s currency valuation, business community advocates generally contend that trying to force China to revalue its currency will only result in layoffs in the United States and price increases for consumer goods in the U.S. marketplace, not the return of jobs lost in prior years. Commission witness Philip Levy, senior fellow at the Chicago Council on Global Affairs, notes that U.S. companies that have moved manufacturing facilities to China would not return those operations to the United States if China’s currency were revalued, but would instead shift manufacturing to alternative cost-effective countries, such as Vietnam, Cambodia, and Malaysia.⁹⁵ This is because, said Dr. Levy, “there is no way a minimum-wage worker in the United States earning a meager annual income of \$13,920 can compete with someone in Asia earning between \$1,000 and \$1,500 annually.”⁹⁶ Groups such as the U.S.-China Business Council also oppose legislative proposals because they would impose tariffs based on “subjective estimates.”⁹⁷ This means that findings would inevitably be politicized, they argue, triggering a trade war that would undermine U.S. employment by stunting the growth of U.S. exports to China without delivering U.S. jobs in import-sensitive industries.⁹⁸

While forcing a revaluation of China’s currency may be a key component to resolving the negative impact of bilateral trade on U.S. employment that does not guarantee it will be a panacea. In his testimony to the Commission, Dr. Shenkar of the Ohio State University recalled the 1985 Plaza Accord,* which was supposed to rebalance the U.S. trade deficit with Japan by decreasing the U.S. dollar’s valuation vis-à-vis the Japanese yen, but even after the currency misalignment was altered in the U.S. favor, the United States never realized the expected recovery of employment in the U.S. car manufacturing industry.⁹⁹ But Dr. Scott contends that there is no doubt that China’s currency undervaluation contributes to the bilateral trade imbalance, and neglecting to push harder for resolution in order to protect the growth of U.S. exports to China is short sighted. “Talking about trade and only talking about the growth of exports is like keeping score in a baseball game and only counting runs scored by the home team,” he says. “It might make your team sound like it’s doing well, but it won’t tell you if they’ve won the game.”¹⁰⁰ While U.S. exports to China have grown dra-

*The Plaza Accord, signed in September 1985, was an agreement among France, West Germany, Japan, the United States, and the United Kingdom, which allowed the depreciation of the U.S. dollar in relation to Japan’s Yen and West Germany’s Deutsche Mark. The goal of this agreement was to reduce the U.S. current account deficit and assist the U.S. economy in recovering from a serious recession by making the U.S. manufacturing industry more competitive in the global market place.

matically, our trade deficit “is still so vast that even if this great growth rate continues, it would take 38 years for America to close it,” he points out.¹⁰¹

The Interagency Trade Enforcement Center

In February 2012, President Obama created the Interagency Trade Enforcement Center (ITEC) via executive order. The purpose was to engage in “robust monitoring and enforcement of U.S. rights under international trade agreements, and enforcement of domestic trade laws.”¹⁰² The center is within the USTR and coordinates enforcement efforts among the Departments of State, Treasury, Justice, Agriculture, Commerce, Homeland Security, National Intelligence, and others. It is meant to provide “a more dedicated ‘whole-of-government’ approach to addressing unfair trade practices and barriers,” by serving as a forum for coordination between experts across agencies.¹⁰³ ITEC may be improving U.S. trade enforcement efforts overall, but there has been no specific news of ITEC efforts aimed at addressing China’s trade abuses since the establishment of the interagency group in February 2012, and the last U.S. request for WTO consultations to resolve a trade dispute with China came in September 2012.¹⁰⁴

Accessibility of Trade Remedies, the Need for a Private Right of Action and Other Proposals for New Enforcement Tools

Even when U.S. industries are successful at seeking trade remedies, they do not always work. Witnesses at the February 21 hearing testified about a range of shortcomings in the United States’ trade remedy toolbox. As Ms. Drake put it, “If a trade remedy case is successful, it should actually deliver the relief that is promised.”¹⁰⁵ But circumvention of penalty tariffs, transshipment of goods through a third party, duty evasion by specific companies, a lack of transparency, access, and accountability, are among the many problems “severely hampering the ability of domestic industries to ensure the orders they have fought for are being effectively enforced.”¹⁰⁶ Ms. Drake told the Commission that we need more tools to “help our trade relationship mature into one that is more balanced and more beneficial to American industries, workers and communities.”¹⁰⁷

U.S. trade remedy laws can be ineffective and U.S. industries can often face challenges bringing petitions for relief because of quirks in trade remedy laws. For example, when a domestic industry brings a case, it is required to demonstrate that a sufficient percentage of other domestic producers in the same industry support the petition. Specifically, petitioners must represent at least 25 percent of domestic production.¹⁰⁸ Sometimes industry interests are fragmented because of shifting trade or investment relationships of large players, so producers in need of relief cannot seek it. As the U.S. wooden furniture industry switched from manufacturing within the United States merely to retailing furniture made in China,

furniture manufacturers-turned-retailers opposed efforts to protect the remaining furniture makers in the United States.* In addition, currently no means exist by which other parties with vested interests in fair trade enforcement, such as states and localities, can bring petitions.

Other significant challenges for U.S. industries seeking relief from anticompetitive Chinese practices are the shortcomings of the WTO's dispute resolution system, including long trial delays and appeals and weak enforcement. As Dr. Scissors points out, "WTO adjudication certainly seemed like an obvious solution to bilateral disputes at the time of the PRC's accession a decade ago. The WTO has since been revealed to be ponderous in dispute resolution, effectively permitting years of 'illegal' behavior before penalties can be imposed."¹⁰⁹

Unfortunately, U.S. industry suffers from limited options for directly pursuing trade complaints, since neither domestic nor international trade rules provide for a private right of action. Existing rules of international trade limit dispute settlements to government-to-government actions. One 1916 law that allowed for private lawsuits against rule-breaking companies was struck down shortly before China joined the WTO. The Antidumping Act of 1916 provided a private cause of action against international companies that illegally dumped goods in the United States by selling them at prices below fair market value. It was the only law that allowed U.S. companies to file an action against competitors directly and in their home market jurisdictions, rather than seeking U.S. government assistance in pursuing dumping charges. But in 2000, a WTO dispute settlement panel ruled that the U.S. law violated Articles VI:1 and VI:2 of the General Agreement on Tariffs and Trade 1994, Articles 1, 4, and 5.5 of the Anti-Dumping Agreement, and Article XVI:4 of the WTO Agreement because the Act, as reinterpreted by U.S. courts, provides antidumping measures that do not comply with requirements of those provisions.^{110,111} In 2004, the Act was repealed by Public Law 108-492, the Miscellaneous Trade and Technical Corrections Act.¹¹²

Market Economy Status

Even as debate focuses on how to rectify negative impacts of the bilateral trade relationship on U.S. employment, there is general agreement that granting China market economy status would exacerbate the problem. Multiple witnesses have testified to the Commission that China is not now a market economy and is not on the path to become one within the next two years. But in December 2016, the provision of China's WTO accession protocol that enables countries to treat China automatically as a non-market economy (NME) expires. China agreed to accept this temporary provision during its negotiations to join the WTO but has aggressively sought to have the designation terminated by its trading partners and will almost certainly demand that the United States treat it as a market economy after 2016.

*For more on the difficulty faced by U.S. furniture and textile industries in bringing unfair trade actions against overseas competitors, see the U.S.-China Economic and Security Review Commission's *2007 Annual Report to Congress*, Chapter 1, Section 4, "A Case Study of the Local Impact of Trade with China: North Carolina."

Neither NME status nor market economy status are explicitly mentioned in China's WTO Accession Protocol. However, the Protocol does specify the expiration of Article 15(a)(ii) in December 2016. At the end of 2016, the existing statutory test will be the only basis upon which the United States determines whether a country operates as a market economy is applied. Under the law, there are criteria that the Administration would have to certify that China has met before granting China market economy status. The main effect of a shift to market economy status for China would be to make it far more difficult for the United States to levy penalty tariffs on China for dumping.* A 2005 study by GAO found that, "if Commerce grants China market economy status ... required methodological changes could well reduce antidumping duties [and] it is not clear whether CVDs [countervailing duties] would compensate for these reductions."¹¹³ However, GAO also concluded that even if China is not designated as a market economy, "there is an element of uncertainty about the magnitude of the total level of protection that would be applied to Chinese products" in either scenario.¹¹⁴ China is currently the single largest target of U.S. antidumping actions. From 2001 through 2012, the United States initiated 91 antidumping cases against China, imposing measures in 66 of those cases, and spearheaded 15 of the 31 WTO complaints brought against China.¹¹⁵

A market economy is an economic system in which decisions about the allocation of resources and production are made on the basis of prices generated by voluntary exchanges among producers, consumers, workers, and owners of factors of production. In China's economy, crucial economic processes are determined by the state rather than by market forces. Chinese government officials themselves describe China as a socialist market economy, in which "the government accepts and allows the use of free market forces in a number of areas to help grow the economy, but still plays a vital role in managing the country's economic development."¹¹⁶ As of 2009, 97 nations had granted China market economy status. But because of government interventions in the Chinese marketplace, the United States and other major developed countries still recognize China as an NME.¹¹⁷

In situations involving imports from an NME, the WTO more readily allows for the "normal value" (the appropriate price in the market of the exporting country) of the imports to be determined using data from a surrogate country. Typically, the WTO requires the normal value of a country's export be based on a strict comparison with domestic prices or costs in that country. Since Chinese domestic prices and costs are often artificially suppressed because of government subsidies, surrogate country data is generally crucial for trading partners to demonstrate that China is engaged in dumping.¹¹⁸

Much attention has been focused on arguments that the expiration of Article 15(a)(ii) will not give China market economy status,

*Dumping is the act of introducing a product into another country's market at less than its "normal value." "Normal value" is "the comparable price, in the ordinary course of trade, for the like product when destined for consumption in the exporting country." See Christian Tietje and Karsten Nowrot, *Myth or Reality? China's Market Economy Status under WTO Anti-Dumping Law after 2016*, Policy Papers on Transnational Economic Law, No. 34 (Transnational Economic Law Research Center, December 2011).

not least because Article 15(d) of China's Accession Protocol makes clear that China's recognition as a market economy is something it must achieve bilaterally with individual members by meeting the conditions of those members' national laws. As international trade law expert Bernard O'Connor argues in his heavily cited paper, *The Myth of China and Market Economy Status in 2016*, China's WTO Accession Protocol contains "no presumption" that it will attain market economy status in 2016, and to imply that presumption "reads out of the law China's burden to prove that it is a market economy as defined by the laws of the country it seeks recognition from."¹¹⁹ But even if market economy status is not automatic in 2016, the expiration of Article 15(a)(ii) does mean that China will no longer automatically be assumed to be an NME. In short, China's market economy status will be left to the determination of each of its trading partners, and the United States will not automatically have to grant China that status after 2016. But even if the United States opts to continue treating China as a non-market economy, the terms of the Accession Protocol will increase the evidentiary burden for justifying the use of surrogate country data in assessing duties against China after 2016.

Eileen Bradner, senior director and counsel for Nucor Corporation, told the Commission that, "part of the reason our trade laws work is because they properly treat China as a non-market, government-run economy. That should not change until China itself changes."¹²⁰ However, China is working under the assumption that market economy status will be conferred upon it in 2016, and any action by the United States to continue treating China as an NME is almost certain to provoke a challenge by China at the WTO. U.S. law lays out criteria for deciding whether or not a country is a market economy, but grants great flexibility to the U.S. executive branch in making the determination,* a determination that Ms. Drake notes is not currently reviewable by U.S. courts.¹²¹ This means that if the U.S. executive branch determines it is diplomatically in our best interest to treat China as a market economy beginning in 2016, negatively impacted companies will have no clear legal recourse to challenge that decision.

The Non-Market Economics of Chinese Investments in the United States

The Primacy of the State Sector in China's Economy

When China joined the WTO, its accession agreement indicated a gradual move towards a free market economy and a diminishing

*The United States' Tariff Act of 1930, as amended, provides a statutory test for determining if an economy can be classified as a market economy. The law specifies that the determination of a country's market or non-market status be made in consideration of the following factors:

- (i) the extent to which the currency of the foreign country is convertible into the currency of other countries,
- (ii) the extent to which wage rates in the foreign country are determined by free bargaining between labor and management,
- (iii) the extent to which joint ventures or other investments by firms of other foreign countries are permitted in the foreign country,
- (iv) the extent of government ownership or control of the means of production,
- (v) the extent of government control over the allocation of resources and over the price and output decisions of enterprises, and
- (vi) such other factors as the administering authority considers appropriate.

See U.S. Section 771(18) of the Tariff Act of 1930, as amended, 19 U.S.C. § 1677(18).

role for state-owned enterprises (SOEs). Although China adopted significant reforms, many of the country's largest and most influential businesses remain state-owned or state-controlled, enjoying preferential treatment and financing at the central, provincial, or local level.¹²² By some estimates, in 2011, China had approximately 144,700 enterprises owned and operated by a branch of the central government with total assets of \$13.7 billion, revenues of \$6.3 billion, and profits of \$418.5 billion, or nearly half of the country's total industrial and business profit.¹²³ For detailed discussion of the breakdown of enterprises owned or controlled by the Chinese state, see Chapter 1, Section 2, of the Commission's 2012 Annual Report.

China's Third Plenum of the 12th National People's Congress, held in late 2013, introduced new reform initiatives for SOEs, but they are primarily aimed at restructuring and increasing the efficiency of the state sector, not reducing the state's role in the economy. The Plenum emphasized the equal importance of the state sector and the private sector, a departure from previous plenums which gave primacy to the state, but it still gave state ownership a "leading role" in the economy.¹²⁴ Commission witness Willy Shih, a professor at the Harvard Business School, described the reforms as a deliberate attempt to increase SOEs' exposure to the competitive forces of China's private economy while preserving their power.¹²⁵ The Brookings Institution's Arthur Kroeber offered a skeptical prognosis, calling it "a very safe bet that when he retires in 2022, Xi will leave behind the world's biggest collection of state-owned enterprises."¹²⁶ "Xi is not some Chinese version of Ronald Reagan or Margaret Thatcher," Kroeber said. "For him and his colleagues, the market is a tool, not an end in itself. The respective roles of state and market need to be clarified, but the state role will remain very large."¹²⁷

A recent media campaign of the State-owned Assets Supervision and Administration Commission (SASAC), which oversees China's 121 central state-owned enterprises, appears to affirm these assessments. SASAC's advertising blitz, via articles and coverage in major state-run news outlets including *The People's Daily*, Xinhua, and CCTV, promotes the benefits of a state sector that has already been "transformed" and "streamlined into a competitive force."¹²⁸ As witness Adam Hersh of the Center for American Progress testified to the Commission:

The same people with the same policy levers and the same financial incentives will continue to be in charge of China's productive resources even if the Third Plenum plans are implemented. . . . The ability to deliver subsidies to keep these state-owned enterprises operating on a non-market basis can go on for quite some time given the political structure and the ability to extract incomes from individuals in China and from firms throughout the economic system. . . . This is not a model that is going to fail in any economically meaningful timeline.¹²⁹

*The number of enterprises owned by the central government has generally been declining each year due to consolidations and mergers rather than privatization.

Characteristics of China's Outbound Investment

Chinese investment in the United States has increased in recent years. Since FDI is generally associated with job creation and economic development, this trend has been generally applauded, particularly within state governments. The Washington, DC, based Organization for International Investment notes in its 2013 report that “foreign companies fund domestic manufacturing plants, buttress research and development facilities, and support 5.6 million well-paying American jobs with average pay of around \$77,000 in 2011.”¹³⁰ The United States International Trade Administration also highlights the importance of FDI for “the creation of jobs, an increase in wealth and living standards, and [the] overall growth and innovation that drive U.S. economic competitiveness.”¹³¹ But the U.S. experience with investment by state-directed corporations is limited, and the ramifications are unclear.

China's global outbound FDI exceeded \$77 billion in 2012 and is projected to reach \$2 trillion by 2020. Of this outbound investment, private firms accounted for only an estimated 9.5 percent, while SOEs accounted for the remainder.¹³² The business motivation for Chinese companies to invest abroad is strong. Some seek to acquire advanced technology to maintain an edge in a fiercely competitive domestic market, and others are driven to expand market share outside of China to broaden their customer bases, develop recognition as global brands, and gain expertise in global marketing and supply chain management.¹³³ But the government is also a key driver for both private and SOE outbound investment activities. International investment helps the government to secure resources needed to maintain China's economic growth, serves as a form of economic diplomacy, and “provides the Chinese government with a channel to invest its vast foreign exchange reserves while boosting long-term economic growth.”¹³⁴

Outbound Chinese investment is supported and encouraged by a formal government framework, the “go out” policy, which was launched in 2000.¹³⁵ Although the Chinese government recently announced plans to eliminate the need for government approval of outbound investments valued at less than \$1 billion, virtually all larger proposed investments by Chinese companies abroad must still be reviewed and approved by the government.¹³⁶ The *Guidelines for Investments in Overseas Countries' Industries* as well as the *Overseas Investment Guidance Catalogue* provide guidance such as recommended industry sectors and recommended recipient nations (of which there are currently 115).¹³⁷ The government involvement in Chinese outbound investment is also underscored by the entourages of businessmen Chinese officials typically bring along when traveling abroad.¹³⁸

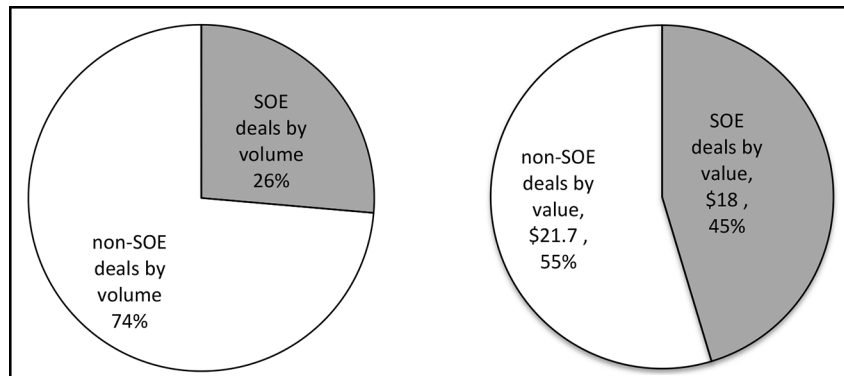
Chinese SOEs and private firms with access to state aid or state-controlled bank capital are “aggressive,” according to Timothy Brightbill, a Commission witness and partner at the law firm of Wiley Rein LLP in Washington, DC. “They think globally, and they have long investment horizons.”¹³⁹ In 2012 testimony before the Commission, Mr. Brightbill noted that Chinese investment abroad “represents a new and growing threat to fair competition and the ability of U.S. producers to compete here and around the globe” because “these SOEs that often do not operate based on market prin-

ciples ... [and] can introduce anti-competitive behavior and other market distortions where they invest.”¹⁴⁰ He described a situation in which U.S. companies are essentially competing directly against the Chinese government in U.S. and global markets, “creating significant imbalances that harm U.S. workers and private companies.”¹⁴¹ Noting reluctance on the part of the United States to address this challenge proactively, Dr. Shih testified that, “we need to learn from history and not delude ourselves into thinking that in the end, fair play and justice will prevail.”¹⁴²

Chinese Investment in the United States

China is the world’s fifth largest overseas direct investor.¹⁴³ It is not yet among the top sources of foreign investment in the United States. Official estimates are that FDI from China averaged roughly \$1 billion between 2010 and 2012, or a miniscule 0.5 percent of the United States’ total inbound FDI.¹⁴⁴ However, it is the fastest growing source of U.S.-bound FDI, registering an average annual growth rate of almost 71 percent from 2008 through 2012.¹⁴⁵ As of 2013, Chinese firms had invested in 37 U.S. states.¹⁴⁶ This trend appears to be accelerating. In June 2013, China announced its largest purchase of a U.S. asset to date—a \$4.7 billion acquisition of Virginia-based Smithfield Foods, Inc.¹⁴⁷ Research conducted by the Rhodium Group, a leading private sector consultancy tracking Chinese investments in the United States, indicates that private firms now account for the majority of U.S.-bound Chinese investments. According to their calculations, in 2013, private firms and entrepreneurs contributed 87 percent of Chinese direct investment transactions in the United States and 76 percent of the total value of inbound Chinese investment.¹⁴⁸ As of the second quarter of 2014, cumulative private Chinese investment in the United States since 2000 totaled \$21.7 billion, as compared to \$18 billion in state-owned investment. (See Figure 9.)

Figure 9: Volume and Value of Chinese SOE and Non-SOE Investments in the United States, 2000–2014Q2



Source: Rhodium Group.

But SOE investment in the United States remains significant, and at any rate, when it comes to Chinese enterprises, the distinc-

tion between public and private is often a false dichotomy. SOEs are frequently complex, multilayered business groups with “a myriad of subsidiary firms, some of which may be publicly listed on stock exchanges in China and overseas.”¹⁴⁹ Joel Backaler, director of the Frontier Strategy Group, testified to the Commission that government control of Chinese firms is not limited exclusively to state-owned enterprises and “it is wrong to think that state-owned enterprises are the only firms with ties to the Chinese government and recipients of financial and political support from the state.”¹⁵⁰ In addition, as Dr. Hersh testified, the extent of state ownership and subsidization “are becoming increasingly obscured as more enterprises are corporatized and registered in offshore tax havens.”¹⁵¹

Potential Pitfalls of Chinese Investment

Although private Chinese companies pursuing deals overseas have typically provoked fewer concerns from government regulators, the murky connections between the state and private sectors show that there may be little difference between the two in terms of their impact on U.S. competitors. Whether nominally private, Chinese companies may enjoy low-cost or free land rights and below-market interest rates on loans, and “in some cases have a monopoly on an entire industry and thus enormous pricing power.”¹⁵² They may not be beholden to market forces, and access to the government’s printing press and preferential treatment can provide Chinese companies competitive advantages far beyond the reach of foreign private counterparts.¹⁵³ It is not the type of Chinese investment but its likely impact that should be foremost in the minds of policymakers.¹⁵⁴ Ms. Bradner summarized the potential anticompetitive challenges for Commissioners:

*We can compete with anyone if it's fair, but if you're competing with a government that does not have to cover their costs, does not have to show a profit to their shareholders or their board of directors, it's a big concern. . . . We need some kind of an enforceable mechanism [to ensure that] these entities [are operating] on commercial terms, and I think the key is that we can't be required to wait until we show injury before some kind of enforcement mechanism kicks in. . . . Some producers will be driven out of business, and it's not just the producers, but it's also the upstream and the downstream affected. And it's not at all clear that even if the foreign producer then corrects itself . . . once they get the market share, it's not at all clear that the domestic industry would be able to reconstitute itself because some of those players will be gone and won't be able to come back.*¹⁵⁵

How does an American company or an American industry compete with a Chinese company that opens up a factory in the United States and has little or no cost of capital and innumerable subsidies? No comprehensive tracking exists of job creation by Chinese investment in the United States, but the bulk of China’s outbound investment is in the form of mergers and acquisitions, rather than

the greenfield investment that tends to be the biggest boon to local employment.¹⁵⁶ Still, some do promise significant job creation.

When a major Chinese SOE investment could create hundreds or thousands of jobs but also creates a threat of unfair competition for the domestic industry in question, how should the United States balance the risks and benefits? In June 2011, the Alabama legislature passed the 2011 Alabama Tariff Subsidy Bill, attracting a \$100 million manufacturing investment from Henan Province-based Golden Dragon Precise Copper Tube Group Inc. by offering tax incentives that countered antidumping duties the U.S. government had leveled against imports of the company's products. Currently no federal law is aimed at deterring states from offering investment incentives that have the purpose or effect of undermining federal trade enforcement efforts.

Rules aimed at preventing undue foreign influence on trade petitions may also fall short where Chinese investment is concerned. Trade petitions for antidumping and countervailing duty cases must be supported by at least 25 percent of the domestic industry (as measured by production), and while U.S. companies that are related to foreign producers and importing the merchandise under investigation may be excluded from calculations of industry support,¹⁵⁷ companies that do not themselves import the merchandise under investigation cannot be excluded. This may prove to be a significant loophole for state-influenced Chinese companies investing in the United States, allowing them to influence unduly trade petitions involving merchandise from China.

Ms. Drake noted that China's WTO accession agreement did include a general requirement that it ensure its SOEs operate on a commercial basis, but this commitment has never been enforced. As for the more specific threats that Chinese investments may pose, she told Commissioners that this is part of "a very broad area where we would like for there to be rules that govern behavior, but we don't have those rules exactly right now."¹⁵⁸ The United States also lacks sufficient tracking of Chinese investments.* The Commerce Department has tracked, on average, slightly less than \$1 billion per year in Chinese investment in the United States between 2010 and 2012, whereas the Rhodium Group, a private sector consulting firm, has tracked \$16.9 billion for that same period.¹⁵⁹ The United States does not have clear data on how much money U.S. investment bankers are raising on behalf of Chinese SOEs in initial public offerings, nor the ownership structures of these SOEs or the bases for their contracts. This is material information for U.S. shareholders in these companies and relevant to a range of other parties potentially impacted when these companies invest here.

*The International Trade Administration (ITA), a bureau within the U.S. Department of Commerce, stated in a 2013 report on Chinese FDI in the United States that it is "important to be aware of different estimates" of Chinese investment. ITA noted that private sector valuations employ different definitions of FDI, data gathering mechanisms, and accounting methods that lead to differences in reported value of investments. See International Trade Administration, *Report: Foreign Direct Investment (FDI) in the United States from China and Hong Kong SAR* (Washington, DC: July 17, 2013).

Are Worries Overblown?

In defense of Chinese investment in the United States, Mr. Backaler, of the Frontier Strategy Group, testified that “overall, the United States has much to gain from the global emergence of Chinese companies, including: employment generation, tax revenues, potential investors in domestic infrastructure, and new market access.”¹⁶⁰ Dr. Scissors says, “American individuals and companies voluntarily engage in transactions with Chinese companies and benefit from them.” He argues that the discussion of the Chinese investment threat is largely politically motivated and says these “exaggerations do not serve the national interest.”¹⁶¹

Other experts, such as Dr. Shambaugh agree, noting that worries over Chinese investment tend to credit Chinese companies with more competence than most of them have yet demonstrated. Dr. Shambaugh stresses that Chinese firms are, by and large, still navigating a steep learning curve to understand how to compete on par with leading multinational corporations from more developed countries. Most do not develop business plans and strategies before they globalize but instead are driven by “pent-up cash in search of a place to invest.”¹⁶² They “often fail to do their homework to develop detailed plans for global market entry ... and demonstrate difficulties adapting to foreign legal, regulatory, tax and political environments.”¹⁶³ In fact, the vast majority of Chinese investments overseas are not even successful. As much as 90 percent of China’s 300 overseas mergers and acquisitions in 2008–2010 were unsuccessful for a variety of reasons, including overpaying and inability to manage the new company.¹⁶⁴

Implications for the United States

New research and analysis conducted by Dr. Schott suggests that the rapid growth of the United States’ bilateral trade relationship with China since 2001 has indirectly contributed to a sharp decline in U.S. manufacturing employment during that same period. Although China has become America’s third-largest export market and fastest-growing export destination, imports of Chinese goods to the United States still far surpass sales of U.S. goods to China. The imbalance is most pronounced in the manufactured goods sector, since the bulk of U.S. sales to China involves commodities whereas the bulk of Chinese sales to the United States is manufactured products. Direct investment in China by U.S. and other foreign corporations has increased sharply since China joined the WTO,¹⁶⁵ and 55 percent of Chinese exports to the United States are now manufactured by foreign invested enterprises. The net result is a trade relationship that clearly produces jobs for Chinese workers but costs jobs for blue collar Americans even as U.S. exports to China grow.

The negative impacts on some segments of the U.S. workforce have persisted, in part, because of inadequate U.S. management of the bilateral relationship. The United States relies heavily on dialogue to press China to uphold its international trade commitments, further open its markets, and ensure fair treatment of U.S. businesses. The number and variety of talks continue to proliferate, but they generally result in vague or narrow commitments, and no

guarantee that promises will be upheld. Under the Obama Administration, American enforcement efforts have been redoubled, but enforcement tools are limited and often ineffective.

There is some room for optimism that China's growing FDI in the United States will become an abundant source of new jobs here at home. Forbes Magazine recently projected Chinese investment in the United States could reach \$300 billion and create 1 million U.S. jobs by 2020.¹⁶⁶ But U.S. experience with Chinese investment remains limited; the bulk of this investment to date has been in the form of merger and acquisition transactions, not the greenfield investments that tend to be big job creators, and concern exists regarding the influence of the state on both state-owned and ostensibly private Chinese companies' behavior, which may pose threats to fair competition in the U.S. marketplace and hurt domestic employers.

Conclusions

- The United States' trade deficit with China is by far its largest, and it has grown sharply in recent years to become the single biggest bilateral deficit in the world. In 2013, it reached \$318.4 billion, setting a record for the fourth straight year, with China exporting nearly four dollars' worth of goods to the United States for every dollar's worth of imports it purchased from the United States. Even as U.S. exports to China have grown, our deficit has grown faster. This deficit is associated with declining U.S. economic competitiveness and job losses, which helps explain why 52 percent of Americans now believe that China poses a critical threat to vital future U.S. economic interests.
- U.S. employment in some sectors, particularly the manufacturing sector, has dropped substantially as trade with China has increased. Since China joined the World Trade Organization (WTO), the United States has lost 29 percent of its manufacturing jobs, according to the U.S. Bureau of Labor Statistics, and economists have begun to establish clear correlations between this job loss and the bilateral trading relationship.
- Even as U.S. manufacturing has slumped, U.S. corporations have relocated manufacturing operations to China and imports of Chinese manufactured goods have grown exponentially. As a result, the benefits of the U.S.-China trade relationship have accrued disproportionately to U.S. corporations, while most of the drawbacks have been borne by U.S. workers.
- Unfair Chinese trade practices, including market protections, subsidization, and favoritism toward certain domestic players, as well as provisions for limiting foreign investment in certain manufacturing operations, have also contributed indirectly to the ongoing decline in U.S. manufacturing employment. Although China committed to sweeping reforms when it joined the WTO, Chinese efforts to honor these commitments have slackened in the last ten years. The Chinese economy benefits from a host of policies and practices that violate the spirit, and even the letter, of Beijing's WTO commitments and harm U.S. interests. Despite a proliferation of bilateral forums for engagement, U.S. efforts to

talk through these problems have consistently fallen short. Enforcement actions have increased, but the results of these efforts have been limited, and many issues remain unaddressed.

- The dominance of state-owned enterprises in the Chinese economy is one of the reasons the United States has not designated China as a market economy, despite China's active pursuit of such a designation for many years. The United States has a statutory test for determining whether an economy can be classified as a market economy. The factors to be considered under U.S. law in granting market economy status include the extent to which the country's currency is convertible, the extent to which wage rates are freely determined by negotiations between labor and management, and the extent to which the government owns or controls the means and decisions of production. Expert witnesses have testified to the Commission that China is not currently a market economy and is not on the path to become one in the near future.
- Because trade remedies are often inaccessible, they are effectively useless to smaller U.S. companies that cannot afford to pursue cases and to companies that cannot muster the threshold industry support. Available trade remedies remain inadequate and fail to account for the interests of other affected constituents, such as workers and communities; China's undervaluation of its currency, for example, continues to function as a de facto subsidy for its exports, and U.S. law still does not provide a sufficient remedy to this problem for private parties. The Administration has not been effective in getting China to change its policies. A number of U.S. petitioners have asserted claims against China's currency policy as an actionable subsidy, but the Commerce Department has refused to treat currency undervaluation as actionable under the law. Even when trade remedy cases are successful, they do not always deliver sufficient and timely relief.
- Growing Chinese investment in the United States could be a boon to U.S. employment, but the peculiarities of state influence on Chinese corporate behavior in the United States may also pose significant competitive challenges for domestic companies, with serious drawbacks for U.S. workers. Chinese investment in the United States could pose impediments to members of domestic industries petitioning the Federal Government for trade enforcement assistance, and anecdotal evidence demonstrates that state efforts to attract Chinese investment can also undermine federal trade enforcement efforts. The potential impact of inbound Chinese investment should be more thoroughly investigated and addressed.

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SECTION 3: CHINA'S HEALTHCARE INDUSTRY, DRUG SAFETY, AND MARKET ACCESS FOR U.S. MEDICAL GOODS AND SERVICES

Introduction

The healthcare sector has played a marginal role in U.S.-China relations, but that is beginning to change. China has become the world's top producer of active pharmaceutical ingredients (APIs) and inert substances, as well as a significant exporter of medical products.¹ U.S. drug companies and distributors are sourcing a large share of ingredients and finished drugs from China and selling them in the United States. Concurrently, China is experiencing a major demographic and epidemiologic transition, challenging the nation's health care system. China's median age will exceed that of the United States within this decade, and the proportion aged 65 and above is projected to increase from 9 percent in 2013 to 25 percent by 2040, totaling 300 million.*² An older and wealthier population, with a rising incidence of non-communicable diseases, is seeking more frequent and better-quality treatment.³ U.S. companies that market drugs, medical devices, and healthcare services consequently view China as an important opportunity.⁴

To explore these issues, the Commission held a hearing in April 2014 on China's healthcare sector, drug safety, and the U.S.-China trade in medical products. Among the witnesses were Christopher J. Hickey, the U.S. Food and Drug Administration's (FDA) country director for the People's Republic of China; Rod Hunter, senior vice president for international affairs at PhRMA; and Karen Eggleston, fellow and director of the Asia Health Policy Program at the Shorenstein Asia-Pacific Research Center of Stanford University. The hearing built on the Commission's past work on healthcare, in particular the April 2010 commissioned report *Potential Health & Safety Impacts from Pharmaceuticals and Supplements Containing Chinese-Sourced Raw Ingredients*, authored by NSD Bio Group, LLC.⁵

The Commission determined that the Chinese government is stepping up efforts to fix the country's troubled healthcare system. In addition to promoting structural reforms, it invested over \$371 billion between 2009 and 2012, much of which has gone toward expanding public health insurance and building healthcare facilities in small towns and rural areas.⁶ The government is also taking preliminary steps to improve regulation of pharmaceutical production. Important measures include updating good manufacturing practices (GMP) legislation in 2011 and consolidating separate reg-

*The U.S. over-65 population is 14 percent. United States Census Bureau, "Quickfacts," <http://quickfacts.census.gov/qfd/states/00000.html>.

ulatory agencies into the China Food and Drug Administration (CFDA) in 2013.⁷

However, not all of China's healthcare reforms have succeeded, and serious problems remain. The government operates the largest hospitals and health insurers, thereby competing against the private sector and creating conflicts between government ownership and regulatory functions. Beijing also intervenes heavy-handedly in the healthcare market by controlling prices for drugs and devices, setting distorted fee schedules for medical providers, and determining which drugs are eligible for reimbursements from government-run insurers. Meanwhile, underfunded hospitals and doctors solicit bribes and overprescribe costly drugs and treatments to compensate for strict curbs on fees. Escalating costs, as well as rising utilization, are driving healthcare spending. Some frustrated patients have even taken violent action against doctors and nurses. Central directives to address these issues are often poorly designed or implemented unevenly by local governments.⁸

The goal of promoting indigenous producers has also impeded efforts to develop a well-regulated pharmaceutical industry. Although some private Chinese companies are competing fairly, the government is subsidizing domestic firms while inducing technology transfer from foreign drug and device makers.⁹ At the same time, China has become one of the prime sources of counterfeit and substandard drugs and drug ingredients. Fragmented supply chains, competition based primarily on pricing, and weak enforcement of standards encourage producers to cut corners.¹⁰

As producer and consumer, China now plays a central role in the global healthcare sector. For the United States, this presents opportunities as well as risks. Outsourcing production to China may help U.S. drug makers lower production costs but can compromise the safety of U.S. consumers. Tainted heparin products that originated in China claimed at least 81 U.S. lives and many sick patients in 2007–2008.¹¹ Since then, the FDA has enhanced its efforts to monitor drug safety in China, at the border, and in the U.S. market. Congress has passed new bills, such as the Food and Drug Administration Safety and Innovation Act (FDASIA) (2012) and Drug Quality and Security Act (DQSA) (2013), to enhance the agency's legal authority and operational capabilities over drug imports. Still, in view of China's vast industry and weak domestic regulation, U.S. consumers remain at risk. As of late September 2014, the FDA had just one part-time and two full-time drug inspectors stationed in China.¹²

U.S. companies looking to sell goods and services in China's healthcare sector also face market access barriers. Onerous clinical trials in China can delay the marketing of U.S. drugs by up to eight years. Uneven access to reimbursement lists makes U.S. drugs less affordable for Chinese patients.¹³ U.S. device makers likewise suffer from a number of regulatory hurdles that impact data protection and competitiveness.¹⁴ A recent crackdown on foreign drug makers on bribery charges has raised broader questions about whether U.S. companies can operate ethically in an authoritarian state plagued by widespread corruption.¹⁵

China's Pharmaceutical Exports: Public Health Risks and Policy Responses

China's Position in the Global Drug Industry

U.S. reliance on foreign medical products has increased substantially in the 21st century. The number of drugs from foreign sources for sale in the U.S. market doubled between 2001 and 2008, and today represents 40 percent of the market. Import reliance is even starker for APIs—some 80 percent are now sourced from abroad.¹⁶ This trend is reflected in U.S. imports from China. According to Dr. Hickey, the total number of shipments of FDA-regulated products from China increased from approximately 1.3 million entry lines (food, drugs and devices) in 2007 to almost 5.2 million in 2013.*¹⁷ Dr. Allan Coukell, a drug safety expert at the Pew Charitable Trusts, testified that about 40 percent of APIs used in the United States are sourced from China and India. The United States imported over 100 million kilograms of pharmaceutical goods from China in 2013, a close to 200 percent increase over the past decade.¹⁸ Charles Bell, a health expert at Consumers Union, told the Commission: “Over the last decade or so, a lot of the sourcing of dietary supplements and vitamin ingredients has shifted to China, following the pattern set by the drug industry.”¹⁹

Product-specific data substantiates these claims. Import statistics gathered by the U.S. International Trade Commission demonstrate that, although volumes fluctuate over time, a substantial share of U.S. non-prescription painkillers such as ibuprofen, acetaminophen, and aspirin, originates in China (see Table 1). The increase in China's share of antibiotics imports is striking, as is the reliance on China for organic glands used for organotherapeutic purposes. According to Chinese government sources, China's volume of production for a range of drugs has increased substantially since 2005 (see Table 2).

Table 1: U.S. Imports of Select Pharmaceuticals, Drug Ingredients, and Vitamins †
(kilograms thousands)

<i>Volume of Total U.S. Imports (kilograms thousands)</i>				
	1998	2003	2008	2013
Ibuprofen	415	1,492	3,017	3,837
Acetaminophen	1,488	2,291	3,040	1,941
Aspirin	2,034	4,314	4,663	4,453
Glands/organs for organotherapeutic uses	—	—	3,758	3,699
Antibiotics	8,455	5,752	6,759	8,233
Vitamin C	12,405	21,601	36,251	33,006
Vitamin D	306	583	1,195	1,246

* In this context, a “line” is an FDA entry line, which represents each portion of a shipment that an importer lists as a separate item on an entry document. According to Dr. Hickey, 3.4 million entry lines in 2013 were medical devices and 25,000 were drugs and biologics.

† HTS codes used for this table are: Ibuprofen (2916391500), acetaminophen (2924296210), aspirin (2918221000), glands and other organs for organotherapeutic uses, dried, whether or not powdered (30019001), antibiotics (all 10-digit codes under HTS 2941), vitamin C and its derivatives (2936270000), vitamins D and their derivatives (2936295020).

Table 1: U.S. Imports of Select Pharmaceuticals, Drug Ingredients, and Vitamins †—Continued
(kilograms thousands)

<i>China's Share of U.S. Imports (%)</i>				
	1998	2003	2008	2013
Ibuprofen	0.1%	6.2%	73.4%	70.3%
Acetaminophen	48.5%	65.1%	41.9%	44.7%
Aspirin	37.0%	39.7%	31.8%	28.6%
Glands/organs for organotherapeutic uses	—	—	69.4%	57.9%
Antibiotics	39.4%	26.3%	51.0%	70.4%
Vitamin C	64.7%	86.4%	90.1%	89.9%
Vitamin D	0.3%	16.5%	53.6%	83.4%

Source: U.S. International Trade Commission.

Table 2: Selection of Top Pharmaceuticals Products Produced in China (by Volume)
(tons)

	Tons		Compound annual growth rate (%)
	2005	2013	
<i>Antibiotics</i>			
Amoxicillin	7,765	14,401	8.0%
Penicillin K	362	4,396	36.6%
Ceftriaxone Sodium	1,320	4,009	14.9%
<i>Antipyretics and Analgesics</i>			
Paracetamol	44,244	64,485	11.4%
Ibuprofen	2,437	5,795	11.4%
<i>Antiparasitics, Vitamins, and Minerals</i>			
Vitamin C	80,804	107,042	3.6%
Vitamin E Powder	12,562	40,133	15.6%
Vitamin A Powder	2,259	5,804	12.5%
Vitamin B12	704	1,789	12.4%
<i>Drugs for Central, Alimentary, and Respiratory Systems</i>			
Caffeine	9,630	14,349	5.1%
Taurine, 2-Aminoethanesulfonic acid	2,141	12,159	24.2%
Piracetam	2,096	2,947	4.3%
Sodium Bicarbonate for Injection	733	1,450	8.9%
<i>Fluid, Electrolyte & Acid Base Balance and Anaesthetics</i>			
Sodium Chloride for Injection	16,239	32,189	8.9%
Dicalcium Phosphate	972	21,638	47.4%
Potassium Chloride for Injection	396	2,156	23.6%
<i>Antiallergic Agents, Enzymes, and Other Biochemicals</i>			
Phenylalanine	122	1,894	40.9%
Thiopropine	710	1,361	8.5%
Leucine	529	1,004	8.3%
<i>Other Substances</i>			
Glucose	255,308	304,388	2.2%
Glucose for Injection	78,153	88,972	1.6%
Xylitol	8,644	34,345	18.8%
Microcrystalline Cellulose	2,036	3,159	5.6%
Fructose	57	1,328	48.3%

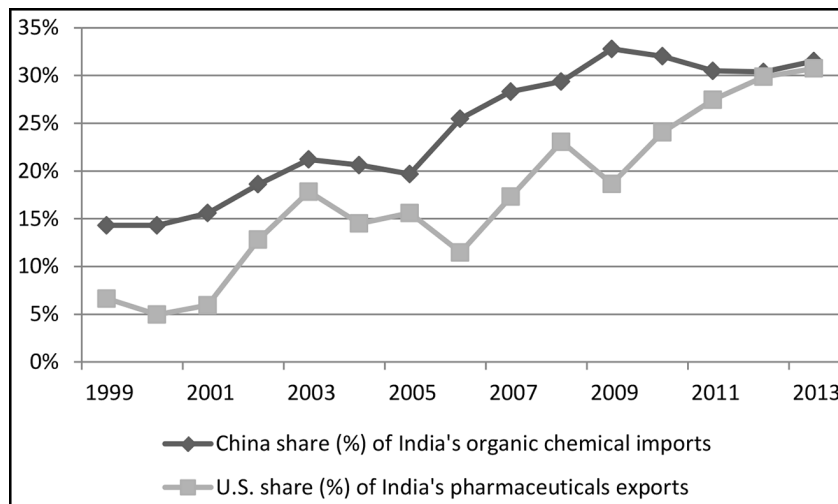
Source: China State Food and Drug Administration, via CEIC data.

The outsourcing of drug production to developing countries is not unique to China. U.S. and European drug makers today are manufacturing fewer small molecules in house and focusing instead on the higher-value development of biologics.* Much of their research and development (R&D) takes place in Boston, Geneva, and other “clusters of expertise.”²⁰ Producers across Asia have entered drug manufacturing, taking advantage of low labor costs, advances in transport and communications, and government policies that encourage value-added exports. India is now the preeminent supplier of generic drugs, serving as an export platform for U.S.-based multinationals, as well as Indian competitors.²¹ To regulate Indian drug exports to the United States more effectively, the FDA has established offices in New Delhi and Mumbai, and stationed one full-time medical products investigator in New Delhi.²²

However, China also occupies a distinctive position in global drug production. In contrast to India, its products tend to enter the value chain further upstream, or in a more preliminary stage—what experts call the “precursor supply chain.”²³ Precise evidence is hard to come by, but experts estimate that China is the top global manufacturer of APIs and drug dyes, binding agents, gel capsules, and other inert substances.²⁴ In a 2010 study of pharmaceutical executives by the consulting firm Axendia, 70 percent of respondents cited China as their top country source for pharmaceutical ingredients.²⁵ Research conducted at the Commission’s request by NSD Bio Group shows that the United States in 2008 was the top destination for China’s pharmaceutical raw material exports, with a 16.2 percent share. India ranked as China’s second-leading export destination.²⁶ Since India’s drug industry is export oriented, a substantial portion of Chinese-origin ingredients processed in India may be exported to the United States as part of finished drug products. Indian customs data show that China’s share of India’s organic chemical imports and the U.S. share of India’s drug exports have both risen over the past decade (see Figure 1).

*The bio/pharmaceutical industry discovers and develops both small molecule drugs (also referred to as New Chemical Entities or NCEs) and biomolecular drugs, also called biologics (also referred to as New Biological Entities or NBEs). While NCEs tend to be chemically synthesized and have a known structure, NBEs are complex mixtures that are not easily identified or characterized. Since the early 1980s, drug innovations for NCEs have leveled off while those for NBEs have increased. Biological products often represent the cutting-edge of biomedical research and, in time, may offer the most effective means to treat a variety of medical illnesses and conditions that have no other treatments available. U.S. Food and Drug Administration, “What Are ‘Biologics’ Questions and Answers.” <http://www.fda.gov/AboutFDA/CentersOffices/OfficeofMedicalProductsandTobacco/CBER/ucm133077.htm>; “Small Molecule Drugs versus Biomolecular Drugs (Biologics)” (James Samanen Consulting, 2014). <http://www.portfoliomangement-solutions.com/the-organization-of-pharmaceutical-rd/small-molecule-drugs-versus-biomolecular-drugs-biologics/>.

Figure 1: China Share of India's Organic Chemical Imports; U.S. Share of India's Drug Exports
(Share, %)



Source: India Ministry of Commerce and Industry, via CEIC.

China's Production of Counterfeit and Substandard Medicines

China is a prolific source of counterfeit and substandard medicines. Fake drug production is, of course, a global problem, not least in India.* Dr. Shaohong Jin, vice president of China's state-run National Institute for Food and Drug Control, maintains that the incidence of fake and substandard drugs in China has in fact declined: His tests of thousands of drug samples indicate that the share of failed drugs fell from 14 percent in 1998 to less than 5 percent in 2013.²⁷ However, there is alarming evidence that points in the other direction. In 2012, for example, Chinese authorities discovered 77 million gel capsules made from industrial waste.† Economist Ginger Zhe Jin told the Commission that fake drugs from China are making their way across the world. In a recent study, she sampled 1,437 drugs sold in 18 poor-to-middle-income countries. Drugs labeled "made in China" accounted for 6 percent of the total sample, but for 20 percent of the fake drugs in the sample.²⁸ The White House Office of National Drug Control Policy states that

*During a crackdown in May 2014, authorities in the United Kingdom seized millions of dollars worth of counterfeit and unlicensed medicines. Of these, 72 percent came from India and 11 percent from China. Margaret Davis, "Fake and Unlicensed Drugs Seized," *Press Association National Newswire*, May 22, 2014, via Factiva.

†Other prominent cases of drug safety lapses in China include: Xinfu Clindamycin Injections (2006); Qiqihar Counterfeit Armillarisin A Injections (2006); Shanghai Hualian Major Drug Production Quality Accident (2007); and Dalian Jingang Anti-Counterfeit Rabies Vaccines (2009). For an analysis of these cases, see NSD Bio Group LLC, *Potential Health & Safety Impacts from Pharmaceuticals and Supplements Containing Chinese-Sourced Raw Ingredients* (U.S.-China Economic and Security Review Commission, April 2010), pp. 35–40; Associated Press, "Tainted Drug Scandal: China Makes Arrests, Seizes 77 Million Capsules in Crackdown of Pills Made from Industrial Waste," April 23, 2012. http://www.huffingtonpost.com/2012/04/23/china-tainted-drugs_n_1444926.html.

China is among the countries producing precursor chemicals for the illicit narcotics trade.* Roger Bate, a counterfeit drug expert and Visiting Fellow at the American Enterprise Institute, says that China is “the largest manufacturer of fake drugs in the world.”²⁹

China has advantages in producing both legitimate and illegitimate drugs. The country’s large manufacturing industry and domestic consumer market facilitate economies of scale that lower costs. To promote goods for export, the Chinese government has for decades promoted foreign direct investment, along with loosely regulated special economic zones that move massive volumes of goods each day.³⁰ During the global financial crisis, the government provided generous export tax rebates to producers of active pharmaceutical ingredients, claiming that this would boost exports in “high value-added” industries.³¹

Protection of intellectual property is weak, which serves as a backdoor subsidy to Chinese companies that rely on piracy for profits. According to data from the World Customs Organization, collected from 121 countries in 2008, 65 percent of seized counterfeit shipments detected worldwide and 79 percent of counterfeits seized in the United States were shipped from mainland China. In the European Union, where sector-specific data is available, 6 percent of all seized counterfeits in 2008 were medicines.³²

China is a top producer of basic chemicals and agricultural products, which supply important drug ingredients to Chinese manufacturers. For example, over half of the global pig herd is based in China, providing a cheap and ready supply of porcine mucosate tissue for crude heparin, which is made into anticoagulant, or “blood thinner.” † China has overtaken the United States as the leader in global chemical shipments (see Figure 2). China’s exports of organic chemicals, the ones most commonly used in pharmaceuticals, grew from \$5.3 billion in 2004 to \$36.5 billion in 2013. Over the same period, the sales revenue of organic chemical producers in China increased from \$17 billion to \$241 billion. ‡³³

The agricultural and chemical industries are heavy polluters of air, water, and soil, and require commodity imports such as soybean feed and petrochemicals. In the interest of public health, domestic stability, and resource security, the Chinese government is taking measures to reform these industries.§ For the time being, though, many U.S. companies find it more expedient to source from China than to produce domestically in the United States.

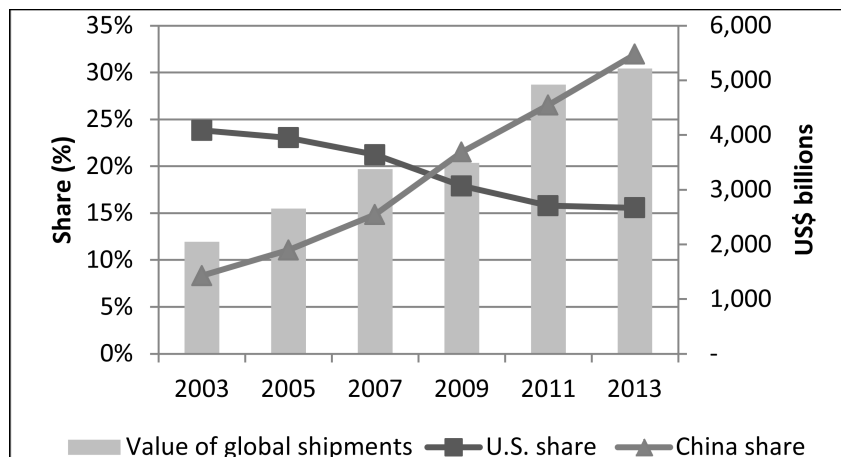
*The White House Office of National Drug Control Policy states: “Global efforts to prevent the diversion of methamphetamine precursors have made significant progress. This is a complex effort, requiring cooperation of the countries that produce these precursor chemicals—principally India, China, and Germany.” *Controlling Precursor Chemicals* (Washington, DC: The White House). <http://www.whitehouse.gov/ondcp/precursor-chemicals>.

† For more information, see U.S. Economic and Security Review Commission, *2013 Annual Report to Congress*, Chapter 1, Section 4.

‡ Export data denominated in current U.S. dollars. Sales revenue data in current renminbi, converted to U.S. dollars based on historic exchange rates (year-end 2004 and year-end 2013).

§ For more information on environmental issues in China, see U.S. Economic and Security Review Commission, *2014 Annual Report to Congress*, Chapter 1, Section 4.

Figure 2: Global Chemical Shipments, 2003–2013: China vs. the United States
(US\$ billions)



Source: American Chemistry Council. <http://www.americanchemistry.com/Jobs/EconomicStatistics/Industry-Profile/Global-Business-of-Chemistry>.

Detecting Harmful Drugs in a Complex Industry

Regulating China's vast drug industry is difficult. Production is extremely fragmented, with some 4,000 manufacturers of pharmaceutical products, about 400,000 retail pharmacy shops, and according to Chinese customs data, about 29,000 firms involved in exporting medical products.³⁴ Since most suppliers in China sell to other businesses downstream instead of directly to the consumer, they are easily missed by regulators. According to Dr. Hickey:

In China, whether they're manufacturers of active pharmaceutical ingredients or, for instance, workshops that do the rendering that creates crude heparin that goes into heparin, those kinds of sites are not accustomed to being inspected as much as let's say [generic drug producer] Ranbaxy in India. So there's less familiarity perhaps with how our inspections work and what our inspection regime is.³⁵

Criminals in China resort to a variety of ruses to avoid detection. According to Dr. Coukell, China hosts many "show and shadow factories," where the factory of record is not the actual origin of an active ingredient.³⁶ Packaging may also take place at a different location from production. Chinese counterfeiters sometimes claim on packages that the drug is "made in India," so that when quality issues are detected, Indian rather than Chinese producers are blamed. Dr. Bate's fieldwork has revealed that manifests at ports are frequently inaccurate, helping fake drugs from China to go undetected when they are unloaded in other parts of the world, particularly at transit ports.³⁷

While China has its fair share of outright criminal operations, many harmful products stem from *semi-legitimate* producers. Examples include licensed chemical producers who supply pharma-

ceutical ingredients that they are not licensed to produce; illegal producers that are owned by companies selling into the legitimate supply chain; and firms that produce legitimate products during the day shift and grey market products during a secret night shift. Suppliers may also adjust the level of quality based on the standards and detection capability of the customer and export market to minimize compliance costs.³⁸

When producers of harmful drugs are identified, it is hard to prove liability. In theory, experts distinguish “substandard” from “counterfeit” drugs; in practice, the distinction is blurred, since companies can claim that they unwittingly corrupted their products. Ingredients may contain residues of toxins, which could originate either from the production facilities themselves (e.g., trace elements of one production line spill over to another) or from a prior stage in the value chain (e.g., agrochemical residues). Moreover, companies may be caught unaware if contamination or counterfeiting was committed by their upstream suppliers.³⁹

When a harmful product reaches the end consumer, its effects vary widely. Most pernicious are cases where an incorrect formula of active ingredients is used. That is what occurred with tainted heparin in 2007–2008: the culprits used an extremely harmful substitute ingredient that was not detected by standard laboratory tests (see textbox). Other illegitimate products commonly seen in the market exert a subtler impact:

- *No active ingredients*: In this case, the patient thinks he/she is receiving effective medication and so foregoes corrective treatment until it is too late. This problem has arisen, for instance, with anti-malarial drugs sold in Africa;⁴⁰
- *Insufficient dosage*: In this case, the patient may develop resistance to the particular drug, making the patient less responsive to subsequent treatments. This problem is compounded among large populations since increasing resistance makes specific legitimate drugs, or even entire classes of them, useless;⁴¹
- *Trace amounts of dangerous substances*: Examples include heavy metals such as lead or cadmium that have been found in China’s contaminated soils. In this case, the damage to the user is cumulative, raising the probability of cancer and chronic degenerative illness. Similar problems arise with food imports from China;*
- *False packaging*: This can affect the quality of drugs in storage and processing, mislead users about ingredients and effects, and in the case of counterfeits, do grievous damage to the reputation of the real company.⁴²

Another challenge for regulators is to identify which types of drug products are most liable to be corrupted. Counterfeiters operate on a risk-return basis. The mimicking of higher-end products

* Over half of herbal dietary supplements tested in a Congressional investigation in 2010 contained trace amounts of lead and other contaminants. While the levels of heavy metals did not exceed levels that the investigators thought were dangerous, in 16 of 40 samples, the pesticide residues exceeded legal limits. U.S.-China Economic and Security Review Commission, *Hearing on China’s Healthcare Sector, Drug Safety, and the U.S.-China Trade in Medical Products*, written testimony of Charles Bell, April 3, 2014.

(e.g., a brand-name drug by a leading U.S. pharmaceutical company) offers a higher return but also a higher risk of detection, since the affected companies can afford superior supply chain monitoring. The faking of lower-end products, such as “made in India” generics, offers lower returns but also a lower risk of detection.⁴³ As Dr. Jin argued, any investment in enforcement by drug makers themselves has to be seen relative to the final consumer price of the drug. If margins are low or the cost of supervision cannot be passed on to the consumer, companies may lack the willingness or capability to properly monitor their supply chains.⁴⁴ According to Dr. Coukell, the likelihood of an active ingredient coming from China is higher in the case of a generic than a brand-name drug.⁴⁵

Counterfeiters often prefer to produce “lifestyle” drugs rather than the better regulated “lifesaving” drugs. Weight-loss pills, antihair loss agents, virility and muscle enhancing drugs, and other non-essential medical products have proliferated in recent years, as has the demand for vitamins and botanicals. According to Mr. Bell, the United States spends an estimated \$32 billion a year on dietary supplements, and six in ten Americans reportedly take dietary supplements on a regular basis. Since lifestyle drugs are rarely prescribed by doctors and pharmacists, consumers are more indiscriminately exposed than in the case of lifesaving drugs. Key facilitators of lifestyle drug sales—and other over-the-counter medications—are online pharmacies, which afford buyers privacy, choice, and convenience, but also make it difficult to certify the quality of the product and the integrity of the seller.⁴⁶ Chinese wholesalers, for instance, have set up websites that claim to be based in Canada.⁴⁷

The dangers of fake lifestyle drugs became apparent in a 2009 case involving a Texas emergency room doctor, who nearly died from tainted weight-loss pills he had purchased on eBay. The blue capsules were loaded with sibutramine, a prescription drug the FDA had warned was linked to heart attacks and strokes and subsequently pulled off the market. The FDA launched a long-term investigation. According to a May 2014 report, the FDA linked the fake pills to a Chinese national, Shengyang Zhou, who had sold them into the United States through a middleman. An agent from the FDA’s Office of Criminal Investigations, posing as a potential client, met with Zhou in Bangkok in 2010. The agent discovered that Zhou had made millions of dollars selling counterfeit drugs that he produced in a small factory operation in Southwest China. He had traveled frequently to the United States, purchasing real drugs that he used as a template to make authentic-appearing fakes.⁴⁸

Lessons from the Heparin Case

Between January 2007 and May 2008, at least 81 Americans died after taking contaminated heparin, a blood-thinning agent. Many other patients suffered from acute symptoms, such as breathing difficulties, plunging blood pressure, nausea, and ex-

Lessons from the Heparin Case—Continued

cessive sweating. Baxter International, Inc., the U.S. company selling the product, relied on a long and complex supply chain for the active ingredient that led back to China. Somewhere in that upstream supply chain, someone deliberately substituted over-sulfated chondroitin sulfate, a counterfeit and toxic ingredient, for crude heparin.⁴⁹

The case exposed troubling gaps in drug supply chain monitoring. Baxter began receiving heparin from a new Chinese plant in 2004. Wisconsin-based Scientific Protein Laboratories (SPL) was the API supplier to Baxter. But SPL had a joint U.S.-Chinese branch, Changzhou Scientific Laboratories (CZSPL), which purified pigs' intestines to make heparin. Baxter did not conduct its own audit of the heparin supplier CZSPL plant until 2007, relying instead on an earlier assessment by a different company. The FDA approved the plant as a supplier for Baxter without conducting a pre-approval inspection, in part because the agency confused the plant with another site in its database.⁵⁰ To make matters worse, CZSPL was licensed as a chemical manufacturer in China, not a pharmaceutical manufacturer, exempting it from the GMP standards enforced by China's State Food and Drug Administration (SFDA).⁵¹

The FDA and the U.S. National Institutes of Health eventually found suspect samples from six companies associated with the contamination over a period of several years.⁵² In March 2008, the FDA inspected the CZSPL facility in China for the first time. It found numerous violations of GMP standards, including scratched tanks with "unidentified material" sticking to their interiors and missing records for some sources of raw heparin.⁵³ Even at this stage, the Chinese government denied Baxter access to upstream workshops and consolidators, and refused the FDA access to two upstream consolidators of heparin as well.⁵⁴

The legal ramifications of the case proved costly for the U.S. pharmaceutical company but had minimal impact on China's heparin exporters. The victims of the contaminated product filed hundreds of lawsuits against Baxter. In the first decision in June 2011, a jury in Cook County, Illinois, awarded \$625,000 to the estate of a 63-year-old Chicago area man, Steven Johansen. The award was for the pain and suffering over a five-day period.⁵⁵ Chinese authorities acknowledged that heparin produced in China contained harmful ingredients but never accepted that the contaminated drug caused the deaths associated with Baxter's products in the United States.⁵⁶ China's heparin exporters appear to have recovered quickly from the scandal: the volume of annual exports fell to 65,087 kilograms in 2008, but has averaged 107,560 kilograms per year since then.⁵⁷

Drug Safety Regulation in China

The first line of defense for guaranteeing the safety of Chinese medical products is the Chinese government itself. The spread of

counterfeit and substandard drugs, however, indicates that Chinese regulators do not adequately meet their obligations. The evident failure to guarantee the safety of domestic drugs has compelled Chinese consumers to buy from abroad. According to Mr. Hunter: “[Because] of the weakness of the regulatory system, [Chinese] people don’t have the same assurance that Chinese-company-produced pharmaceuticals are of the same quality, even if it’s the same molecule.”⁵⁸

China only began to build an FDA-type regulatory system in the late 1990s. As Mr. Hunter acknowledged:

*One of the challenges that China has is building the state capacity of a modern regulatory state. Our experience [in the United States] is a relatively recent one of the last several decades that we’ve built an FDA capacity to the extent that it [is] now. China has to do this all within a period of a decade. [The CFDA] is not very well-resourced, either in terms of numbers of people or financially.*⁵⁹

Several capacity-building efforts are already underway. Since a Memorandum of Agreement was signed between the then-SFDA and the U.S. Department of Health and Human Services (HHS) in December 2007, U.S. regulators and corporations have lent support to China’s efforts.⁶⁰ Areas of progress include:

- *Bureaucratic consolidation:* China in 2013 reorganized disparate government agencies into the CFDA to better coordinate regulatory efforts. The FDA’s China Office has encouraged the CFDA to participate in the International Medical Devices Regulatory Forum, an important multilateral venue. The FDA’s Center for Devices and Radiological Health now meets regularly with its CFDA counterparts under the auspices of the Forum.⁶¹
- *New legislation:* China updated its GMP legislation under the “Good Manufacturing Practices for Pharmaceutical Products (2010 Revision),” which took effect in March 2011. The legislation was a coordinated effort by the then SFDA, the National Development and Reform Commission (NDRC), the Ministry of Industry and Information Technology (MIIT) and the Ministry of Health (MOH). According to Dr. Hickey, the Chinese regulators incorporated and implemented some of the U.S. FDA’s suggestions.⁶² The new GMP requires the manufacturers of sterile drugs to acquire the new GMP certificate by year-end 2013, and other drug manufacturers to be licensed by December 2015. Those who fail to meet the requirements face rejection of their new drug registration applications, and in the case of a pending registration application, suspension of the approval process.⁶³
- *Upgrading record-keeping systems:* At the 2009 Joint Commission on Commerce and Trade (JCCT) talks between the United States and China, China agreed to strengthen its oversight and enforcement of APIs and counterfeit pharmaceuticals by establishing a Drug Master File system; enforcing record-keeping requirements for companies that manufacture and sell APIs; and regulating unregistered Chinese companies adver-

tising and marketing APIs at foreign trade shows and on the Internet.⁶⁴

- *Personnel training*: The FDA is training CFDA regulators. For example, an expert from FDA's China Office recently instructed over 1,000 Chinese inspectors on how to conduct inspections based on the new GMP standards China enacted in 2011.⁶⁵
- *Joint enforcement and information sharing*: The FDA has held formal monthly meetings with its Chinese counterparts since 2008. The two sides discuss strategy and regulatory issues, collaboration and joint capacity building, and emerging issues of bilateral concern. Informal communication also takes place on a day-to-day basis. In addition, CFDA inspectors now regularly observe FDA inspections in China, and since 2012, the FDA's Office of Criminal Investigations has worked closely with CFDA to strengthen U.S.-China collaboration in the fight against Internet-based illegal distribution of falsified, counterfeit, and adulterated goods. In December 2013, Hong Kong, U.S., and European authorities jointly raided 700 counterfeit websites worldwide.⁶⁶ The Customs Administration of China also announced in 2012 its intention to carry out a global operation, in conjunction with the World Customs Organization, to combat illicit drugs and chemical substances being transported by post and express carrier.⁶⁷

It is questionable, however, whether these efforts will tangibly improve drug regulation in China. First, the new GMP standards may not be well adapted to China. According to one industry journal, cash-strapped drug manufacturers, lacking in technical support and intrinsic capacity, have adopted a "wait-and-see attitude" toward the new legislation, or worse yet, abandoned plans to apply for the new GMP certificate by the 2015 deadline.⁶⁸ For similar reasons, the CFDA has had difficulty enforcing record-keeping requirements and regulating unregistered Chinese companies advertising and marketing APIs overseas.⁶⁹ The FDA also informed the Commission that China has made slow progress in implementing its 2009 JCCT commitments:

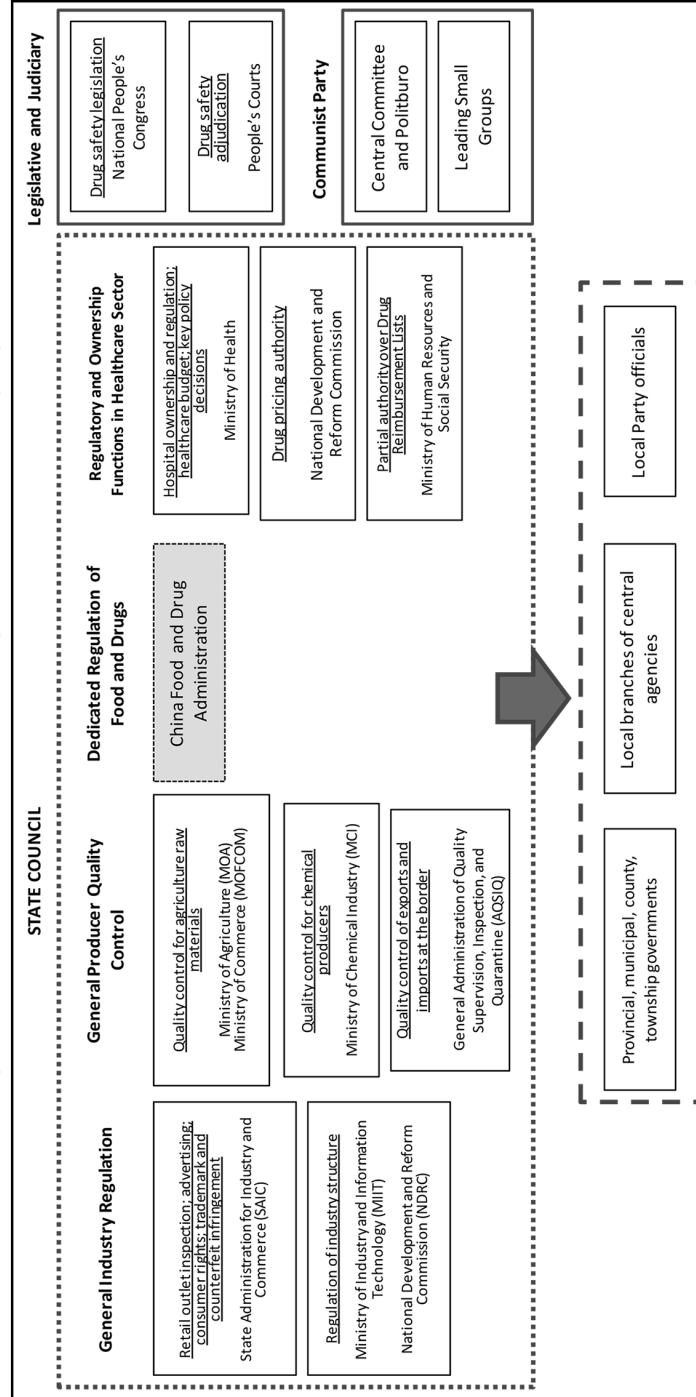
While the China Food and Drug Administration aims to establish a Drug Master File system, it has not done so to date. Through China's current implementation of new requirements for Good Manufacturing Practices for drugs, it is in the early stages of implementing the commitment to enforce requirements for record keeping. . . . China has not yet made significant strides in regulating unregistered Chinese companies that advertise and market APIs at foreign trade shows or on the Internet.⁷⁰

According to Dr. Bate, China's GMP legislation does not clearly define at what point in the supply chain manufacturers are obliged to comply. A process may be GMP-certified based solely on final process in final location, without compliance by earlier suppliers.⁷¹ Dr. Jin told the Commission that dietary supplement facilities are subject only to voluntary GMP standards.⁷²

Second, in China's fragmented and authoritarian political structure, conflicts of interest frequently contribute to regulatory failure. At the central level, this is illustrated by the uncertain status of China's food and drug regulator, the CFDA. The CFDA's predecessor, the State Food and Drug Administration (SFDA), was one of the U.S.-type regulatory bodies that the Chinese government created in the 1990s.⁷³ Revelations of corruption, however, resulted in the execution of the head of the SFDA in 2007 and placement of the agency under the supervision of the MOH in 2008.⁷⁴ A Product Quality and Food Safety Leading Small Group was set up the same year to coordinate government agencies in addressing major issues related to product quality and drug safety.⁷⁵ The creation in 2013 of the CFDA—a ministerial-level agency directly answerable to the State Council—signaled a reversion to the earlier policy of having an independent food and drug regulator. Yet it left many bureaucratic dilemmas unresolved. For instance, the scores of pharmaceutical producers in China that are registered as “chemical producers” are answerable to the Ministry of Chemical Industry. The same goes for ingredients sourced from the agriculture sector, which are monitored by the Ministry of Agriculture and Ministry of Commerce. In regard to drug exports and imports, the CFDA has usurped some functions of the General Administration of Quality Supervision, Inspection, and Quarantine (AQSIQ), but the AQSIQ is still a ministerial-level department that reserves the right to inspect production facilities (see Figure 3).⁷⁶

In addition to infighting among agencies, drug regulators in China are too decentralized. There are about 400 CFDA staff in Beijing, compared to approximately 200,000 local food and drug regulators in 31 provinces, 2,321 counties, and 339 municipalities.⁷⁷ Because some localities (e.g., Shanghai municipality) are better able to enforce GMP standards, counterfeiters may migrate to other jurisdictions that are less vigilant.⁷⁸ Where local regulators are underpaid and overloaded with applications, they become susceptible to bribes from drug producers seeking expedited approvals.⁷⁹

Figure 3: Overview of Chinese Government Agencies Involved in Drug Regulation



Because regulators rely on local governments for funding, their work may be compromised by vested interests, or face capacity constraints. Fiscal decentralization policies enacted in 1994 have left local governments with limited taxation and borrowing authority but an inordinate share of government spending on public services. According to a World Bank study, governments at the county level accounted for half of healthcare expenditures in China in 2007.⁸⁰ Recent changes to the Party cadre evaluation system have introduced novel performance metrics that emphasize local welfare;* yet the overarching concern of cadres is to collect taxes and fees to meet spending obligations.† There is thus an incentive to support rather than punish local drug and chemical enterprises that boost the economy and generate tax revenue.⁸¹ In Shanxi province, for example, the China Centers for Disease Control and Prevention in 2010 appointed a private entrepreneur to head up their Biological Product Distribution Center and allowed his own company (not licensed to handle vaccines) to monopolize vaccine distribution in the province.⁸² If a safety lapse occurs, cadres come under greater pressure to maintain social stability. Yet in such cases, there is still an incentive either to cover up the incident or to “pass the buck,” since the cadres wish to remain in favor with the higher-ranking officials who determine their career advancement.⁸³

The tendency of local governments to shirk responsibility is apparent in cases of epidemic outbreaks. According to Dr. Yanzhong Huang of the Council on Foreign Relations, China has made significant strides in terms of disease surveillance and risk communication since the severe acute respiratory syndrome (SARS) outbreak ‡ a decade ago. But communication between local and central authorities is not always smooth. After the H7N9 outbreak § in 2013, the Shanghai municipal government and the Shanghai Cen-

* Since the 11th Five-Year Plan (2006–2010), the Chinese government has adjusted the cadre evaluation system to incorporate more qualitative performance metrics, such as energy efficiency and environmental governance. Alex L. Wang, “The Search for Sustainable Legitimacy: Environmental Law and Bureaucracy in China,” *Harvard Environmental Law Review* 37 (2013): 36–440.

† In a groundbreaking study, the political scientist Victor Shih and his colleagues find “no evidence that strong growth performance was rewarded with higher party ranks at any of the post-reform party congresses. Instead, factional ties with various top leaders, educational qualifications, and *provincial revenue collection* [emphasis added] played substantial roles in elite ranking, suggesting that promotion systems served the immediate needs of the regime and its leaders, rather than encompassing goals such as economic growth.” Victor Shih, Christopher Adolph, and Mingxing Liu, “Getting Ahead in the Communist Party: Explaining the Advancement of Central Committee Members in China,” *American Political Science Review* 106:1 (2012): 166–187.

‡ The U.S. Centers for Disease Control and Prevention define SARS as follows: “Severe acute respiratory syndrome (SARS) is a viral respiratory illness caused by a coronavirus, called SARS-associated coronavirus (SARS-CoV). SARS was first reported in Asia in February 2003. The illness spread to more than two dozen countries in North America, South America, Europe, and Asia before the SARS global outbreak of 2003 was contained. Since 2004, there have not been any known cases of SARS reported anywhere in the world. The content in this Web site was developed for the 2003 SARS epidemic.” U.S. Centers for Disease Control, “Severe Acute Respiratory Syndrome (SARS).” <http://www.cdc.gov/sars/>.

§ The U.S. Centers for Disease Control and Prevention defines H7N9 as follows: “H7N9 is the designation for one subtype of influenza viruses that is sometimes found in birds, but that does not normally infect humans. Like all influenza A viruses, there also are different strains of H7N9 ... While H7N9 viruses had never before been detected in people, from March 31 through April 30, 2013, China reported more than 126 cases of human infection with this new H7N9 virus ... Most of these infections are believed to result from exposure to infected poultry or contaminated environments, as H7N9 viruses have also been found in poultry in China. While some mild illnesses in human H7N9 cases have been seen, most patients have had severe respiratory illness, with about one-third resulting in death.” U.S. Centers for Disease Control, “H7N9: Frequently Asked Questions.” <http://www.cdc.gov/flu/avianflu/h7n9-faq.htm>; and U.S. Centers for Disease Control, “Avian Influenza A (H7N9) Virus.” <http://www.cdc.gov/flu/avianflu/h7n9-virus.htm>.

ter for Disease Control and Prevention (CDC) were able to identify a novel type of flu virus but waited two weeks before communicating with the central CDC in Beijing. During the hand, foot, and mouth disease outbreak in 2008, the Anhui provincial government waited two weeks to communicate the problem and send samples of the virus to the central CDC.⁸⁴ Local CDCs in sensitive border regions and minority areas, such as Xinjiang Autonomous Region and Yunnan Province, are reluctant to divulge information on infectious diseases.⁸⁵

Even where the government has acted decisively to combat counterfeiting, it has done so via sporadic crackdowns. After scandals involving tainted pharmaceutical, milk, and pork products were revealed in 2007, a nationwide counterfeit food and drug sweep went after scores of producers, and lasted until around 2009.⁸⁶ The recurrence of food and drug safety incidents since then, however, suggests that these law enforcement efforts came up short.

Inconsistent enforcement is compounded by shortcomings in China's legal system. As the U.S. Trade Representative's annual report on China's World Trade Organization (WTO) compliance details, China has a history of weak enforcement against counterfeiting and intellectual property theft.⁸⁷ In 2009, China's Supreme People's Court issued a new judicial interpretation that raised the penalties—including lengthy jail sentences—for manufacturers of counterfeits in cases where their products cause severe harm to public health.⁸⁸ Although it is difficult to assess the application of this specific law, a study of China's 2009 Food Safety Law, conducted by John Balzano of Yale University Law School, suggests potential pitfalls. Disputes invoking the Food Safety Law are frequently dismissed by the courts because a product's origin is difficult to trace or its specific defects are obscure. More often than not, reported cases are against retailers of food products rather than the counterfeiters themselves, because of the lack of access to evidence or in-depth discovery procedures. Among the tort cases studied by Dr. Balzano, none of those allowed in court involved death or serious injury, presumably because such cases would be politically sensitive. In none of the tort cases were punitive damages awarded.⁸⁹

These judicial procedures are emblematic of the absence of checks and balances in China's political system. Dr. Jin argued that local governments "have an incentive to try to minimize the exposure of [drug safety] problems, and the whistleblowers or even sometimes the victims have been discouraged, harassed, or jailed for merely exposing the problem."⁹⁰

According to Dr. Bate, private investigators in China avoid publicity and contact with foreigners for fear of being punished by the government.⁹¹ Mr. Bell said he felt "some obligation to speak out for the right of Chinese civil society to do what we're doing here [in the United States]. You need to have watchdogs, and you need to have whistleblowers."⁹²

U.S. Regulation of Drug Imports from China

Safety lapses in the pharmaceutical industry have become a global concern. In the United States, the 2007–2008 heparin scandal drew wider attention to the issue. Several hearings on drug safety have since been held in Congress, including by the House Energy

& Commerce Committee (April 2008 and March 2014) and the Senate Committee for Health, Education, Labor, and Pensions (September 2011). A landmark report issued by the Institutes of Medicine of the National Academies in 2013 called for tougher standards and regulations to avert an impending crisis.⁹³ Finding concrete solutions at the international level, however, has been difficult. There is disagreement on whether “counterfeit” should be defined merely as a product that violates intellectual property rights—a definition preferred by major pharmaceutical companies—or also incorporate broader concepts of public health. Although drug safety is an issue that affects patients in all countries, some governments view anticounterfeit efforts foremost as a threat to affordable generic drugs or to the growth of their domestic pharmaceutical industries.⁹⁴

In this context, the U.S. FDA, U.S. companies, and regulators elsewhere have begun to tackle drug safety on numerous fronts. In addition to supporting Chinese regulatory authorities, the FDA relies on two “layers of defense”: its inspectors on the ground in China and its regulators back in the United States.

The FDA’s Work in China

Based on a bilateral agreement signed in December 2007, the FDA now operates three field offices (Beijing, Shanghai, Guangzhou) in China. The U.S. agency has been working with the Chinese government to train local regulators and to share information. Drug inspections carried out by the FDA in China averaged 79 per year in 2011 to 2013, compared to 19 inspections in 2007. In fiscal year 2013, the FDA’s China office received \$10 million in additional federal funding and was authorized to increase its staff size from 13 people (eight U.S. civil servants and five Chinese staff) to 27 people, which includes nine additional drug inspectors.⁹⁵

Given China’s vast drug industry, these measures are only preliminary steps. According to Dr. Hickey’s testimony, the FDA currently has just one part-time and two full-time drug inspectors based in China. Even the increase in staff size proposed in fiscal year 2013 proved difficult to implement due to China’s reluctance to grant the necessary work visas. Although the FDA notified the Chinese government as early as February 2012 of its intention to hire more inspectors, China delayed issuing the visas.⁹⁶ The FDA told the Commission in September 2014:

There are currently two visa applications pending with the Chinese Government for staff members who were hired for the FDA China Office in FY 2012 and FY 2013. In discussions connected with the December 2013 visit to Beijing by Vice President Joe Biden, the Chinese Government assured FDA that it would begin granting visas for an increased number of U.S. food and drug CSOs [Consumer Safety Officers] stationed in China. These new FDA staff, however, have still not received visas.⁹⁷

Limited in terms of manpower, the FDA also faces restricted access to Chinese manufacturing sites. Said Dr. Hickey:

When we’re operating overseas, whether it’s in China or India or anywhere else, we don’t have the same authority

*to enter a premises that we do in the United States. ... As a result, in the vast majority of cases when we're doing inspections in China or in India or elsewhere, we are notifying firms in advance and working to schedule those inspections in advance. ... We do reserve the right, and we have, in a handful of cases, done inspections unannounced as we would in the United States.*⁹⁸

Changes in U.S. Product Safety Regulation

The FDA issued a landmark report in 2011 on improving U.S. supply chain security, titled *Pathway to Global Product Safety and Quality*. The report signaled a shift away from the frequency of inspections toward *risk-based* surveillance.⁹⁹ A program called PREDICT forms the foundation of this new surveillance system. It collects data on individual producers—including those registered in China—from a variety of federal agencies, corporations, and foreign governments to calculate a customized risk score for every line in an entry. PREDICT score calculations are based on numerical weights, which factor in inherent risk, data anomaly, and data quality rules as well as the compliance history of firms and products associated with the line. Application of rules results in the generation of a cumulative score for a specific line. The higher the score, the greater the identified risk and likelihood that the product will be put on import alert and detained at the border. Each line receives a percentile rank based on all other lines screened over the past 30 days.¹⁰⁰

PREDICT does not assign risk based on specific countries where the FDA carries out field assignments. However, a substantial number of FDA import alerts are specific to a country or area. For China, as of September 24, 2014, there were nine country-wide import alerts for particular products. According to Dr. Hickey, an exporter that has been placed under import alert usually stops sending products to the United States, because such an exporter is unwilling to meet the extensive requirements for readmission.¹⁰¹

In 2012–2013, Congress also passed two pieces of legislation that significantly enhance the FDA's legal authority and operational capability. The first is the Food and Drug Administration Safety and Innovation Act (FDASIA), signed into law on July 9, 2012. Under this law, the FDA has the following rights:

- To administratively detain drugs, meaning the FDA has the authority to halt the movement of drugs while investigating and determining the appropriate response. Products may also be refused admission into the U.S. market, unless the importer is able to demonstrate that the product is in compliance with relevant laws and regulations. Dr. Hickey has argued that this new authority better enables the FDA to better prevent “port shopping,” as well as to refuse exports from a Chinese manufacturing site that “delays, limits, or refuses inspection.”*¹⁰²
- To make explicit that industry compliance with GMP standards includes managing upstream risks, which would also include inputs sourced from China. FDASIA also requires drug

*Port shopping refers to the practice of selecting ports that are understaffed or otherwise ill-equipped to conduct rigorous inspections.

importers to register with the FDA, and adhere to Good Importer Practices (GIP). The FDA has indicated that it expects to propose a GIP rule by April 2015, and finalize it by January 2017.¹⁰³

- To share confidential information with other foreign regulators; enter into agreements to recognize inspections by foreign regulators that are capable of conducting inspections that meet U.S. standards; and use the results of these foreign inspections as evidence of compliance with U.S. law.¹⁰⁴
- To collect user fees from industry to fund reviews of innovator drugs, medical devices, generic drugs and bio-similar biological products.¹⁰⁵ According to Dr. Hickey, these user fee acts have greatly enhanced the FDA's ability to carry out risk-based assessments.¹⁰⁶

The Drug Quality and Security Act (DQSA), signed into law on November 27, 2013, further supports the FDA's mandate. Title II of DQSA outlines critical steps to build an electronic, interoperable system to identify and trace certain prescription drugs as they are distributed in the United States. The new "track and trace" system will enable verification of the legitimacy of the drug product identifier down to the package level, enhance detection and notification of illegitimate products in the drug supply chain, and facilitate faster recalls of drug products. Dr. Coukell explained that, four years from now, every package of prescription drugs in the United States will have a unique serial number that can be checked against a database. Faking a serial number requires far greater skill than faking packaging.¹⁰⁷

In spite of these legislative and regulatory improvements, unsafe drugs are still entering the United States from China. Risk-based surveillance represents an innovative step, but may not suffice to offset the low frequency of inspections at the border and overseas. A 2010 report by the Government Accountability Office reported that the FDA inspected fewer than 11 percent of the plants on its own list of high-priority sites.¹⁰⁸ Moreover, according to Dr. Bate, the laboratory tests currently required by the FDA and U.S. Pharmacopeia are insufficient to uncover trace amounts of harmful residues. Until recently, so-called "rapid dye tests" were only able to detect products that contained no active ingredients, not ones that contained inadequate levels of ingredients, which can be just as harmful.¹⁰⁹

Dietary supplements remain under-regulated as well. Mr. Bell told the Commission that, among the 465 adulterated drugs and supplements recalled in the United States between January 2004 and December 2012, over half were dietary supplements. His research demonstrates, however, that the FDA has done a poor job taking dangerous supplements off the market.¹¹⁰

Actors at the local level in the United States also share the blame for lapses in drug safety. In its 2011 study "After Heparin: Protecting Consumers from the Risks of Substandard and Counterfeit Drugs," Pew Charitable Trusts found that many safety lapses occur through the redistribution of drugs among small wholesalers, national and regional wholesalers, and hospitals and pharmacies.¹¹¹ Individual states retain the power to grant licenses to

intermediaries between manufacturers and retailers. In states where regulation is lax, individuals with little or no pharmaceutical qualifications are able to set up drug wholesale businesses, usually online. Some states previously were reluctant to implement “e-pedigree”^{*} systems, suggesting that nationwide adoption of unique serial numbers in the coming years will not be easy.¹¹²

Industry self-regulation is on the increase, led by Rx360, a non-profit consortium that includes the largest U.S. drug manufacturers and suppliers. The consortium is developing a shared audit program and disseminates risk information to its members.¹¹³ Even so, Dr. Bate alleges that 90 percent of Chinese drug substances bought by Western purchasers are only audited *after* purchase. U.S. and European pharmaceutical companies are misinformed about the identity of the manufacturing site of 39 percent of the drug substances they purchase from China. A mere 6 percent of suppliers in China provide impurity profiles[†] to their U.S. customers. U.S. companies frequently fail to verify the GMP certifications of new suppliers before entering into contracts, and background checks on suppliers-of-suppliers are even rarer.¹¹⁴ When a safety lapse does occur, companies may delay a recall out of fear that it will damage their reputation, even though a delay can lead to heavier losses once the problem is exposed.¹¹⁵

Drug safety experts also question whether the right lessons have been learned from the heparin incident. As Dr. Coukell acknowledged:

*Heparin was a wake-up: All of a sudden, we realized we had risks that we weren't thinking about, we weren't aware of, we needed to make some changes. . . . So if that was the sort of level of awareness of branded pharma at that stage, it's reasonable to assume that there are companies that are less sophisticated, that are store brands, that have less skin in the game, that just have not taken those steps now, and have frankly less incentive to do so.*¹¹⁶

China's Healthcare Challenges and Reforms

China's Healthcare Market Potential

Alongside its role as a pharmaceutical exporter, China is also becoming a major healthcare market. China's healthcare spending, public and private, amounted to \$357 billion in 2011.¹¹⁷ That is still far from the \$2.8 trillion spent in the United States in 2012,¹¹⁸ but China could catch up with the U.S. market sooner than ex-

^{*}An electronic pedigree is an e-document that provides data on the history of a particular batch of a drug. It satisfies the requirement for a 'drug pedigree' while using a convenient electronic form.

[†]Various regulatory authorities such as the International Conference on Harmonization (ICH), the U.S. FDA, and the Canadian Drug and Health Agency (CDHA) are emphasizing purity requirements and the identification of impurities in APIs. The various sources of impurity in pharmaceutical products include reagents, heavy metals, ligands, catalysts, other materials like filter aids, and charcoal, as well as degraded end products obtained during and after manufacturing of bulk drugs. The different pharmacopoeias such as the British Pharmacopoeia, United States Pharmacopoeia, and Indian Pharmacopoeia are slowly incorporating limits to allowable levels of impurities present in APIs or formulations. Various methods are used to isolate and characterize impurities in pharmaceuticals. Kavita Pilaniya et al., "Recent Trends in the Impurity Profile of Pharmaceuticals," *Journal of Advanced Pharmaceutical Technology and Research* 1:3 (July–September 2010): 302.

pected. McKinsey & Company projects the country's healthcare spending to reach \$1 trillion in 2020.¹¹⁹ Benjamin Shobert, a healthcare consultant and member of the National Bureau of Asian Research, forecasts China's over-the-counter and branded generic market to expand from \$23 billion in 2010 to \$369 billion in 2020. That would make China the second-largest pharmaceutical market after the United States.¹²⁰

China's burgeoning healthcare market signals a transition to a mature economy. China's fertility rates have declined precipitously, owing not only to urbanization and rising incomes, but also to the lasting effects of the One-Child Policy. Average Chinese are living longer lives and are less prone than their grandparents to contract infectious diseases.¹²¹ China's healthcare system must now adjust to an aging demographic, which entails treatment of chronic diseases and provision of long-term care. A 2013 study, for example, showed that China in 2010 had more people living with Alzheimer's disease than any other country—and twice as many cases of dementia as the World Health Organization (WHO) thought.¹²² Over the next two decades, the WHO predicts the number of non-communicable diseases among Chinese over age 40 to rise substantially (see Table 3).¹²³

Table 3: Projected Cases of Non-Communicable Diseases in China, 2010–2030

(Cases millions)

	2010	2020	2030	Compound annual growth rate	
				2010–2020	2020–2030
Myocardial infarction	8.1	16.1	22.6	7.1%	3.4%
Stroke	8.2	21.4	31.8	10.1%	4.0%
COPDs	25.7	42.5	55.2	5.2%	2.6%
Lung Cancer	1.4	4.6	7.4	12.6%	4.9%
Diabetes Mellitus	36.2	52.1	64.3	3.7%	2.1%
Total	79.6	136.7	181.3	5.6%	2.9%

Source: Adapted from the World Bank, "Toward a Healthy and Harmonious Life in China" (2011), p. 2.

Urbanization and rising incomes are also spurring China's healthcare sector. Just half of China's population officially resides in cities, and given that urban residents currently spend twice as much on healthcare as rural residents, health spending will probably increase along with urbanization. China's economic growth is slowing but has created a middle-income class of some 300 million people. Household consumption growth, though low as a share of gross domestic product (GDP), is outpacing other large economies. At the same time, the healthcare sector is still underdeveloped relative to wealthier countries. The ratio of healthcare spending to GDP was 5.2 percent in 2013, compared to an Organization for Economic Cooperation and Development (OECD) average of 9.5 percent. As of 2012, China had 1.8 physicians per 1,000 people, a figure that ranged from 2 to 4.3 in OECD countries. Similarly,

there are only 3.7 hospital beds per 1,000 people—European Union countries average greater than six.¹²⁴

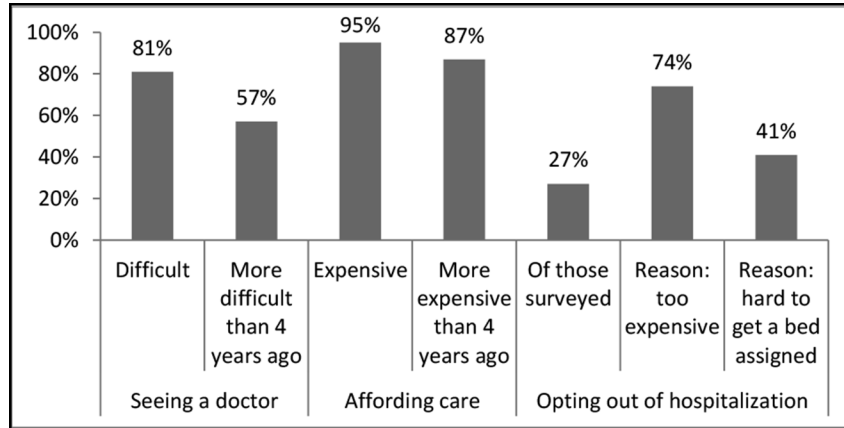
China's policy priorities appear to be aligning around healthcare. In 2009, the government released a long-awaited healthcare reform bill, the product of three years of deliberation by the senior party leadership. The bill sets out five ambitious goals: to extend basic government-subsidized health insurance; expand the population health benefit package; strengthen primary care; control the price of essential drugs at grassroots service providers; and reform government-owned hospitals.¹²⁵ Dr. Huang estimated that the Chinese government invested over \$371 billion in healthcare between 2009 and 2012, which accounted for 5.7 percent of total fiscal spending.¹²⁶ In China's 2014 central government budget, healthcare is among the fastest growing items, along with national defense and social security, and surpasses spending on science and technology.¹²⁷ Mr. Hunter told the Commission that the government's extension of public health insurance, attaining 95 percent of China's population in 2011, will help drive healthcare spending.¹²⁸ At the Third Plenum of the 18th Party Congress, held in November 2013, the government offered further suggestions for healthcare reform.*

Systemic Challenges: Unaffordable and Low-Quality Care

China's healthcare system still has many failings. One indicator of the system's own troubled health is the rapid rise in costs, which have consistently outpaced per capita income growth, making care less and less affordable. According to a 2008 estimate, the average treatment cost for an inpatient stay is equivalent to 60 percent of China's annual per capita income. Another study found that rising healthcare expenditures in the early years of the 21st century led to the impoverishment of 67.5 million people.¹²⁹ "Inaccessible and unaffordable healthcare" is perennially cited as a top concern in China's social surveys;¹³⁰ an October 2013 survey revealed that such sentiments have not changed much since the recent healthcare reforms were implemented (see Figure 4). Many ordinary patients choose either to forego treatment or to resort to traditional Chinese medicine, a cheaper alternative.

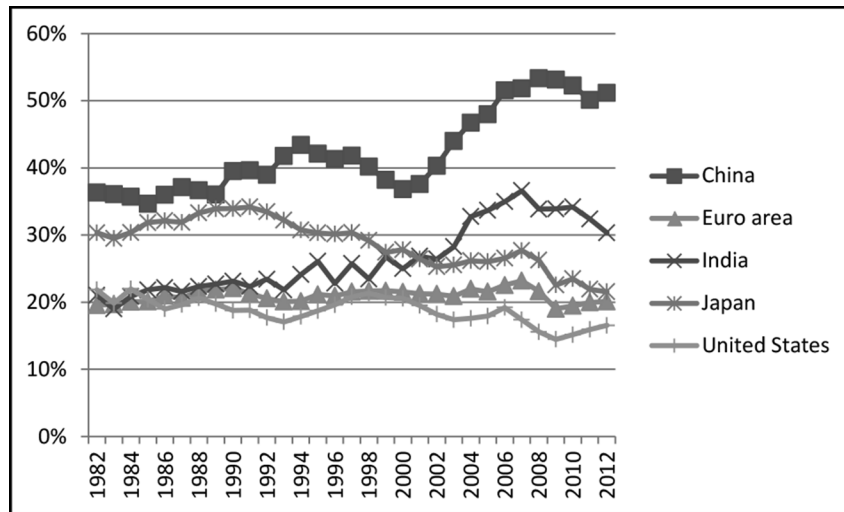
* Important policy suggestions set out in the Third Plenum Decision include: (1) integrate medical services across regions and rural and urban areas, especially at the grassroots level; (2) pay medical staff based on performance and skill, and allow physicians to practice in many locations; (3) allow private providers to be incorporated as designated locations for medical insurance and give priority to non-profit medical institutions; (4) reform the method of paying for medical insurance; (5) expand medical insurance to cover catastrophic diseases.

Figure 4: Public Opinion on Healthcare in China (October 2013)



Source: Horizon Research Consultancy Group, via Yanzhong Huang, "What Money Failed to Buy: The Limits of China's Healthcare Reform," Council on Foreign Relations, March 4, 2014.

Figure 5: Gross Savings Rates by Country



Source: World Bank.

High healthcare costs also damage China's economy. Households accumulate excessive savings to make up for rising costs, hampering growth (see Figure 5). As the workforce share of the population peaks and the ratio of retirees to workers increases, China can ill afford to finance exorbitant healthcare costs. Chinese workers, many of them single children, are forced to support not only themselves but also their dependents (see textbox, "China 'Getting Old before Getting Rich'"). Stated Dr. Huang:

So this is what I call the schizophrenic situation the Chinese government has to face: On the one hand, they have the incentive to lower the prices to rein in the rapid increase of healthcare costs. On the other hand, they have strong incentives to promote the healthcare industry. That means high healthcare costs because they say, “well, healthcare spending is only [5] percent of total GDP, but the world average is about 9 percent, so we still have a lot of room to improve.”¹³¹

China “Getting Old before Getting Rich”

China’s labor force is peaking and its “first demographic dividend” is ending. This may impact economic growth. Fewer workers will be forced to finance more dependents, while the government will have to divert more resources from capital spending (on items such as infrastructure) to current spending on healthcare. In a 2008 study of 40 countries, China is the only one in which retirees are funded almost entirely from labor income, due to a shortage of public retirement funds and non-monetary assets.¹³²

China’s life expectancy is primarily increasing among people aged 60 or older, who contribute little to productivity gains in the labor market. Due to the One-Child Policy, which was relaxed only recently,* many single adult children have to foot the medical bills of their parents and grandparents (representative of the “4–2–1” family structure). Changing social norms place additional strains on China’s healthcare market. Parents of migrants take care of their grandchildren in rural villages while their children work in the cities. In return, migrants earn higher wages and use surplus income to support their parents in old age. This “implicit social contract,” however, is falling apart due to the decline in filial piety values and the strains of the “4–2–1” family structure. Urbanization also weakens traditional problem-solving capacities in rural areas that facilitate care for the sick, elderly, and unemployed.¹³³

Higher costs have not translated into better quality or efficiency in delivering care. Academic studies show that, relative to Europe and the United States, China’s hospitals have low rates of staff productivity and are inefficient in terms of the time and cost required to cure illnesses. Smaller hospitals and local clinics have low bed occupancy rates.¹³⁴ China has more magnetic resonance imaging (MRI) machines per million people than middle-income countries like Thailand and Mexico; yet qualified staff is in short supply, especially at lower-level facilities.¹³⁵ While underproviding basic services, doctors routinely induce demand among wealthy and well-insured patients by over-prescribing expensive drugs and treatments, and prolonging inpatient stays. According to a 2010 es-

*As of this year, China will allow families in urban areas to have two children if one parent is a single child. Previously, both parents had to be single children to do this.

time, “supplier-induced demand” accounts for over 20 percent of China’s healthcare spending.*¹³⁶

Compounding subpar care at hospitals is deficient preventive care. China’s urban residents on average consume more calorie-rich diets and engage in less physical activity than 30 years ago.¹³⁷ According to the WHO, 61 percent of China’s adult males smoke.† About one in every seven Chinese has high blood pressure (hypertension),¹³⁸ and according to a nationwide survey released in September 2013, China accounts for one in three diabetes sufferers globally.¹³⁹ Based on a 2012 study by the U.S. National Institutes of Health, lung cancer accounts for a quarter of China’s cancer illnesses, with a much higher incidence than in the United States.¹⁴⁰ Meanwhile, mining, industry, and traffic accidents persist—China led the world with 275,983 traffic fatalities in 2010 (approximately twice the per capita rate as the United States, which had 32,788 fatalities).¹⁴¹

Equally taxing on health is the state of the environment. Drinking water is rendered unsafe by manure runoff, chemical residues, and other pollutants.¹⁴² According to an April 2013 study in a British medical journal, outdoor air pollution caused 1.2 million deaths in China in 2010, nearly 40 percent of the global total. In a March 2014 report, the World Bank projected that the environmental effects of urban sprawl will cost China \$300 billion a year in premature deaths, birth defects, and other health-related problems.¹⁴³ Where preventable illnesses do not result in death, they cause an increase in disability-adjusted life-years, which reduces a person’s ability to participate productively in society.

Infectious diseases in China have resurged as well. Stated Dr. Eggleston: “The nature of disease in China has changed from a primary burden of infectious disease to a disease burden dominated by chronic, non-communicable diseases . . . but with important lingering problems from endemic and reemerging infectious diseases such as hepatitis (a primary cause of liver cancer), multi-drug-resistant tuberculosis, and HIV/AIDS.”¹⁴⁴ A new strain of avian influenza (H7N9) resulted in 132 infections and 44 deaths in the spring of 2013, primarily in China.¹⁴⁵ Sexually transmitted diseases are spreading in border regions and major industrial centers where migrant laborers, female sex workers, and intravenous drug use are common.¹⁴⁶ Not least, the overuse of antibiotics in Chinese hospitals has reduced antimicrobial effectiveness,‡ posing a threat to global public health.¹⁴⁷

*Supplier-induced demand is not unique to China. The medical scholar Milton Roemer first proposed this hypothesis in 1961 from the observation that areas with greater hospital bed supply showed greater hospital use. The basic theory is that because doctors have more medical knowledge than their patients, patients depend on their doctors for treatment decisions, and doctors might exploit this situation by suggesting higher reimbursement procedures or by providing excessive care. A 1989 study, for example, demonstrated that Caesarean sections provided \$500 more in income to physicians than vaginal delivery. Kim Beomsoo, “Do Doctors Induce Demand?” *Pacific Economic Review* 15:4 (October 2010): 554–555. For a discussion of this problem in the United States, see Craig L. Garthwaite, “The Doctor Might See You Now: The Supply Side Effects of Public Health Insurance Expansions,” *American Economic Journal: Economic Policy* 4:3 (2012): 190–215.

† This figure is based on adjusted prevalence estimates for WHO member states. World Health Organization, *Report on the Global Tobacco Epidemic* (2013), p. 276.

‡ An antimicrobial is an agent that kills microorganisms or inhibits their growth.

Accounting for the Problems in China's Healthcare System

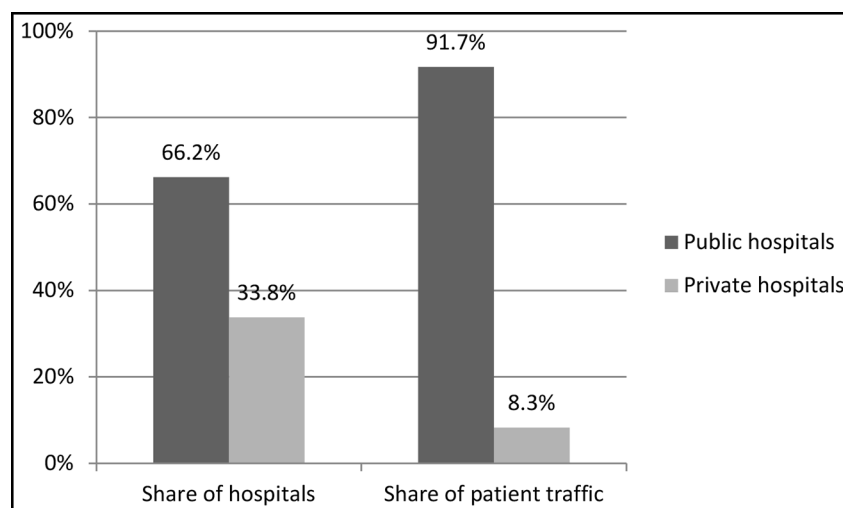
Why has China's healthcare system underperformed in terms of cost and delivery? Certainly, administering healthcare in a large developing country is challenging. Experts also disagree on what the ideal healthcare policy should look like. What is clear is that China's market reforms have not done enough to improve healthcare. Mao-era China (1949–1976) lacked modern medical infrastructure and qualified professionals, but basic care was affordable.¹⁴⁸ From 1960 to 1980, China's average life expectancy increased by 24 years, compared to a world average of 11 years.¹⁴⁹ Since then, a series of misguided policies has slowed down progress in public health indicators and made the healthcare system resistant to meaningful reform.

The Government as Owner and Regulator

Private healthcare provision in China has moderately expanded since the government introduced market-oriented reforms in the 1980s. Every third provider in China today is in private hands (either for-profit or non-profit). In December 2010, China enacted new policies to encourage private investment in hospitals; for example, the approval process for opening new joint venture hospitals was shifted from central to provincial authorities.¹⁵⁰ The official target is for private hospitals to handle 20 percent of in-patient and outpatient traffic by 2015.¹⁵¹

Nonetheless, over 90 percent of China's patient traffic in 2010 went through public hospitals (see Figure 6). Private providers in China tend to be much smaller than public hospitals in terms of total assets, staff, beds, and equipment, and deal mainly with specialized cases, like skin disease and sexually transmitted diseases, rather than general acute cases.¹⁵²

Figure 6: Private vs. Public Hospitals: Share of Patient Traffic, 2010
(584 million hospital visits; 20,918 hospitals)



Source: Jing Ulrich et al., "Medicine for the Masses-China's Healthcare Reform: Progress and Future Steps," J.P. Morgan Hands-On China Report (J.P. Morgan, October 10, 2011), p. 3.

Dr. Eggleston, citing field research she conducted in Chinese hospitals, said that private and public providers both suffer from policy distortions in the healthcare system. Privatization in and of itself is not the solution.*¹⁵³ What is clear is that the playing field is not level; private providers confront a series of regulatory hurdles. Because they tend to be ranked lower in China's hospital accreditation system—over which local governments have considerable discretion—private providers have difficulty attracting the best doctors.† Since doctors are licensed to work only at one hospital, they prefer larger public providers, which offer greater incentives for career progression, as well as welfare benefits. Private providers frequently resort to hiring retired healthcare workers, which may undermine their service quality and reputation.¹⁵⁴ Patients are discouraged from seeking private care because many such providers are not under contract with government insurers.¹⁵⁵

Meanwhile, the 2009 healthcare reforms have done little to upgrade the public healthcare bureaucracy. Dr. Eggleston and her colleagues note that “Ministry of Health, military, and [state-owned] enterprise hospitals all provide similar services, increasing competition but also contributing to excess capacity and lack of coordinated care.”¹⁵⁶ The MOH exercises conflicting roles as regulator, manager, owner, and financier of state-owned healthcare providers.¹⁵⁷ According to Dr. Huang, MOH opposition was a key reason why pro-market measures were watered down in China's 2009 healthcare bill.¹⁵⁸ Beyond the MOH, regulation is divided into silos. For example, the CFDA issues drug approvals, but drug pricing authority rests with the NDRC, China's premier industrial planning body. Health insurance is administered separately by the MOH for rural areas and the Ministry of Human Resources & Social Security for urban areas.¹⁵⁹

Insurance Coverage and the Referral System

Before market reform, rural cooperatives (under the Cooperative Medical Scheme, or CMS) and urban work units bore most healthcare costs. Although this system extended privileges to party cadres and urban workers, most Chinese had access to basic treatment and preventive care. Market reforms, however, gradually dissolved cooperatives and work units, while failing to account for migrant workers who fell through the cracks. The result was a rapid in-

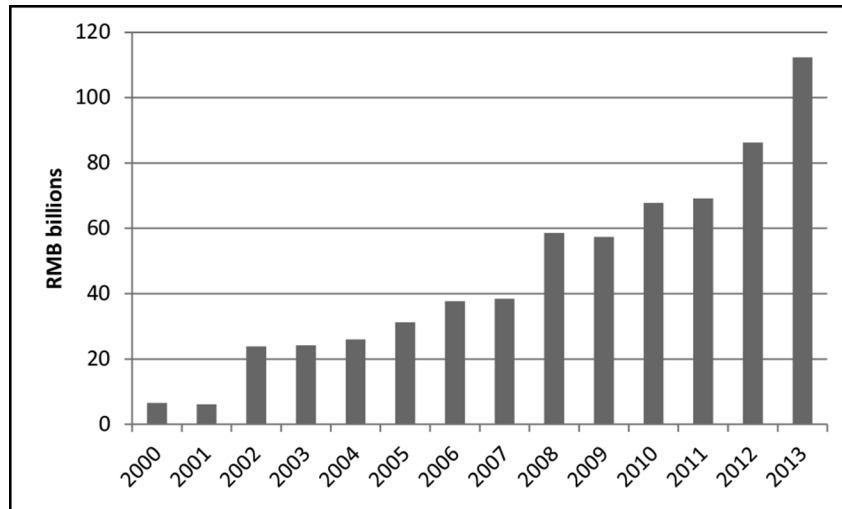
*A study carried out by Dr. Eggleston and her colleagues in Guangdong, one of China's wealthiest provinces, shows that private providers account for a disproportionate share of outpatient surgery, a niche market for patients seeking care at bargain prices. The same Guangdong study also finds that mortality rates—a common metric of quality—do not statistically differ between government and non-government hospitals of similar size, accreditation level, and patient mix. The scholars conclude that “changes in ownership type alone are unlikely to dramatically improve or harm overall quality.” Karen Eggleston et al., “Comparing Public and Private Hospitals in China: Evidence from Guangdong,” *BMC Health Services Research* 10:76 (2010): 1–11.

†According to Dr. Eggleston: “Chinese hospital accreditation began in 1989 with a system established by the Ministry of Health. This system defines three hospital grades (3, 2, and 1) based on infrastructure and administrative level and three within-grade levels (A, B, and C) based on evaluation by a committee established by the local health bureau. Since 2005, the hospital accreditation system rates hospitals according to a wider range of criteria, including ‘scientific management,’ patient safety, and service quality, and allows for rewards (e.g., government budgetary subsidies) and sanctions (e.g., fines or risk of closure) . . . The national accreditation guidelines give local governments considerable discretion in implementation, which limits comparability across regions. Many provinces do not include the private sector, and few include [township health centers] and village clinics.” Karen Eggleston et al., “Health Service Delivery in China: A Literature Review,” *Health Economics* 17 (2008): 160.

crease in out-of-pocket spending, which skewed delivery toward urban areas, the wealthy, and party cadres.*¹⁶⁰

Since the 1990s, the government has taken measures to improve coverage, primarily through government-run insurance programs. In 1998, the government introduced basic medical insurance for urban employees (UEBMI), based on payroll taxes paid by the employer and employee. The proceeds were divided into individual accounts for outpatient care and pooled risk accounts for inpatient and catastrophic needs. This was followed in 2004 by the introduction of a new CMS (NCMS) for rural residents, based on a small premium that is matched by the central and local government. A similar system of basic medical insurance was introduced for urban residents (URBMI) in 2007.¹⁶¹ Insurance coverage was ratcheted up under the 2009 healthcare spending plan. While the majority of Chinese was uninsured before 2008, about 95 percent are covered by government insurance plans today. The bulk is enrolled in the rural NCMS, which counted nearly a billion members by 2010.¹⁶² Expanded coverage is reflected as well in the value of total health insurance premiums, which grew from virtually zero in the year 2000 to over RMB 100 billion (about \$17 billion) last year (see Figure 7).

Figure 7: Total Health Insurance Premiums in China
(current RMB billions)

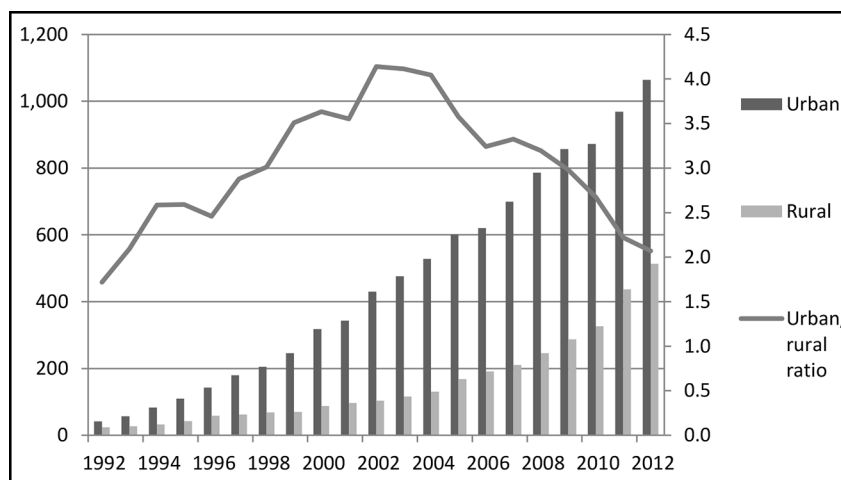


Source: China Insurance Regulatory Commission, via CEIC.

* Said Dr. Huang: "At the provincial level, the provincial leaders certainly have access to good healthcare for free. They have the Provincial People's Hospitals for each province. In some provinces, they also have the military hospitals that provide similar service. ... Despite the healthcare reform, there's still a percentage of basically what we call 'cadres,' the government officials [that] can access healthcare for free. ... There may be a couple million, eight million or so, of the government officials. They have free access to healthcare. But there's also a hierarchy in terms of what kind of services you have free access to." U.S.-China Economic and Security Review Commission, *Hearing on China's Healthcare Sector, Drug Safety, and the U.S.-China Trade in Medical Products*, testimony of Yanzhong Huang, April 3, 2014.

Relative to other parts of the reform agenda, insurance coverage has had moderate success in increasing access and reducing costs. The share of private spending on healthcare has declined sharply, from a peak of 60 percent in 2001 to 35 percent in 2011. Reimbursement rates for inpatient treatment expenses increased from 50 percent in 2008 to 75 percent in 2013.¹⁶³ City dwellers a decade ago spent four times as much on healthcare as their rural counterparts; in 2012, they spent only twice as much (see Figure 8).^{*} At the National People's Congress meetings in March 2014, Premier Li Keqiang announced that the annual government subsidy for basic medical insurance premiums for the NCMS and URBMI would be raised again to RMB 320 (\$52) per capita, from RMB 120 (\$20) in 2010.¹⁶⁴

Figure 8: Per Capita Healthcare Spending in China
(in RMB)



Note: RMB in current prices.

Source: China National Bureau of Statistics, via CEIC data.

However, insurance expansion has not been a panacea. Said Dr. Huang:

The problem is that [the official coverage rate] includes 200 million migrant workers who are nominally covered in the countryside, but because they live and they work in the cities, they actually are not covered because their health insurance schemes so far are not portable. ... If you [dis]count these 200 million migrant workers, the actual coverage rate is about 87 percent.¹⁶⁵

Insurance coverage is also shallow. According to Dr. Eggleston, the NCMS and URBMI, which are voluntary government-sub-

^{*}Convergence between rural and urban spending power generally indicates a decline in rural-urban inequality. In the healthcare sector, however, rural spending may be attributed to induced demand or high costs, so that convergence with urban spending levels is not necessarily a measure of success.

sitized programs, have lower premiums and less generous benefit packages than the mandatory and longer-standing insurance programs for urban employees and government workers. Some provinces are merging the NCMS and URBMI to widen risk pooling and thereby deepen benefit packages, but these reforms are at an early stage.¹⁶⁶ At present, according to Dr. Huang, most benefit packages fail to cover dental care and many of the effective medicines for treating non-communicable diseases.¹⁶⁷

Paradoxically, the expansion of insurance coverage has also compelled patients to seek too much inpatient care. The hospital bed utilization rate surged from 36 percent in 2003 to 88 percent in 2011, worsening the overcrowding at large hospitals.¹⁶⁸ A root cause is the absence of a functioning referral system. Before market reform, Communist China's healthcare system was built on a three-tiered hierarchy of government-run providers,* with separate systems for urban and rural areas. Local clinics, which focused on preventive care, were the first resort for the sick, who could only visit larger hospitals with an official doctor's referral. Although the basic three-tier system is still in place, patients can now choose to forego local providers in favor of larger hospitals, as long as they can afford the cost. This has reduced the use, quality, and reputation of local clinics.†

The bias of patients toward larger hospitals has also affected government efforts to build out local clinics. In the government's 2009–2011 healthcare budget, 71 percent of supplier-side spending went toward upgrading or constructing medical facilities, primarily in rural areas. The result was 2,000 new county hospitals (China has 2,859 counties); 29,000 new and 5,000 upgraded township hospitals; and thousands of clinics.¹⁶⁹ According to Dr. Huang, “the county hospital is extremely crowded, but at the township health center you stay an entire day and won't see that many people actually seeking care . . . despite the fact that the government has invested billions of dollars trying to strengthen the grassroots level healthcare institutions.”¹⁷⁰

Financing and Payment of Providers

On the supply-side of the healthcare sector, market reforms led to changes in the way China's providers are financed and paid. In the prereform period, central government funding, particularly in urban areas, was the primary source of provider income. Beginning in the 1980s, however, decentralization forced local governments to shoulder most of the funding burden, widening disparities between rich and poor regions. Overall subsidies were reduced as well; in 2009, the government health budget accounted for less than 10 percent of the actual costs of hospitals. The smaller pot of government funding was heavily skewed toward larger hospitals, even though

* In rural areas, the hierarchy is village clinics (tier-1), township health centers (tier-2), and county hospitals (tier-3). In urban areas, the hierarchy is urban health centers (tier-1), district hospitals (tier-2), and city hospitals (tier-3).

† Researchers from Stanford University conducted a study of 44 township health centers in 2005 to 2008. They found that rural health insurance “did not increase the overall number of patients served or the likelihood that a sick person would seek care at a township center.” Kimberly S. Babiarz et al., “China's New Cooperative Medical Scheme Improved Finances of Township Health Centers But Not the Number of Patients Served,” *Health Affairs* 31:5 (2012): 1065; Karen Eggleston et al., “Health Service Delivery in China: A Literature Review,” *Health Economics* 17 (2008): 151.

these facilities are less cost effective and prevention oriented than primary care units.¹⁷¹

While forced to generate their own revenue, healthcare providers in China have been squeezed by distorted fee schedules and price controls. The government, on one hand, has forced providers to offer essential treatments and drugs at below marginal cost; on the other hand, it has deregulated prices for costlier treatments and permitted hospitals. Hospitals not only prescribe their own drugs, but also charge markups on the drugs they sell. Providers thus have a perverse incentive to undersupply basic drugs and services, and oversupply costlier ones. Alternatively, they can raise the quantity of drugs and services provided to make up for the low prices of basic services. A 2010 study found that the average Chinese hospital depends on drug sales for 45 percent of its revenue, and for every four doctors employs one pharmacist. As Dr. Eggleston has noted, once patients choose to receive treatment at a certain provider, they have little choice about what goods and services they will consume, and rely on doctors to determine what is right for them.¹⁷² Over time, patients have come to expect drug prescriptions as part of their treatment. According to a 2008 study, China's spending on medicines accounts for 40 percent of total health expenditure, compared to 16 percent in OECD countries."¹⁷³

A further perverse incentive has to do with how government-run insurers pay providers. Because Chinese insurers use a "fee-for-services" system without adequate safeguards, providers are able to charge excessive fees retroactively, based on services rendered. Insurers in most advanced economies adopt sophisticated managed care systems to contain costs, such as diagnostic-related groups (pay providers based on prospective costs for a given treatment); capitation (pays providers a set amount for each enrolled person assigned to them, whether or not that person seeks care); or a fixed pool of funds (pay providers a fixed sum based on average case load, case mix, and other criteria).¹⁷⁴

Reforms have done little to alter costly incentives. Although government funding for healthcare has increased, only a small share of these funds has gone toward subsidizing the day-to-day operations of hospitals. Local governments, which contributed some three-quarters of the \$371 billion in investments in 2009–2012, have become reluctant to pick up the tab, especially in poor regions that are short of revenue. Vague directives from Beijing, which grant local authorities autonomy to experiment with healthcare reforms, have resulted in uneven implementation and regulatory uncertainty. Many providers pocket the funds from the government and use them as "seed money" to buy expensive equipment and ramp up capacity to offer specialized services. Recent data indicates that hospital revenue still depends heavily on drug revenue and expensive treatments.¹⁷⁵ Although pilot programs have tried out sophisticated payment systems, fee-for-services remains the norm.¹⁷⁶

The government is attempting to control drug prices by establishing an essential drugs formulary (the National Essential Drugs List, EDL) and forbidding markups. But this strategy has backfired. Government subsidies meant to compensate for the loss in drug revenue have been grossly insufficient, because policymakers

underestimated the hospitals' original markup rates, which in many cases exceeded the legal rate. Larger hospitals have used their political leverage to continue charging markups for lucrative drugs, while shirking MOH standards for prescribing a certain volume of essential drugs. The brunt of the reform has thus fallen on the already unpopular grassroots providers, who have responded to the no-markup policy by reducing their drug inventories, reinforcing the incentive of patients to seek care at larger providers.¹⁷⁷ According to Xiaoqing Lu Boynton, a China healthcare expert at Albright Stonebridge Group, forcing down drug prices has also caused shortages in drug production for domestic consumption. Chinese drug makers, many of them small private firms, do not see why they should produce drugs that offer scant profits.¹⁷⁸

The Medical Profession

A key reason why doctors overprescribe drugs and treatments is that they earn low base salaries. Doctors rely on fee-based revenue, and in many cases, are rewarded by hospital administrators based on the revenues they bring in rather than the efficacy of treatment. Bribes are another form of income. Said Ms. Boynton: "Patients who can afford bribery can get better care."¹⁷⁹

Only a small share of added government spending has gone toward raising medical workers' salaries. Hospital administrators, in turn, prefer to invest in physical assets, such as new machines. Since doctors cannot form independent unions, they lack bargaining power. Normally, they are licensed to work in just one hospital. According to Dr. Eggleston, the government hospital has to consent if its physician is going to go practice in a private hospital, "but then the government hospital manager doesn't necessarily have the incentive to let their best doctors do that."¹⁸⁰

Doctors in China are increasingly confronted by patients who are upset about the high cost and poor quality of care. According to Dr. Eggleston, patients have begun to disregard advice for taking drugs, assuming that profit-seeking is distorting the doctor's judgment.¹⁸¹ Worse yet, angry patients have resorted to violence. Murray Scott Tanner, a researcher at the Center for Naval Analysis, told the Commission that China's "medical disturbance" incidents, in which patients or their family members "violently beat, threaten, or curse medical personnel," increased from 10,248 in 2006 to 17,243 in 2010, and have "attracted the attention of party leaders and law enforcement officials."¹⁸² In 2006, the last year that MOH published statistics on hospital violence, attacks by patients or their relatives injured some 5,500 medical workers.¹⁸³ The government in March 2014 passed a new regulation requiring police, rather than in-house security services, to maintain the order and safety of hospitals.¹⁸⁴

Low pay, limited mobility, and difficult work conditions have reduced the supply of good doctors. According to a prominent epidemiologist who has done fieldwork in China, the medical profession is looked down upon by aspiring professionals.¹⁸⁵ As Mr. Shobert observed, "A doctor that graduates in Beijing for the first couple of years will make less money than if he were driving a taxi-

* For more information, see Chapter 2, Section 3, "China's Domestic Stability."

cab.”¹⁸⁶ According to Dr. Huang, the competitiveness of entering medical studies in China is considerably lower than in the United States, because the country’s best minds find better job prospects elsewhere. The quality of medical education is also inferior: “If you meet someone from China who claims that he’s an M.D., don’t think that it’s the same M.D. you find here in the U.S. because usually these are the people who . . . receive five years of medical training, basically on the undergraduate level.”¹⁸⁷

Young Chinese who graduate with a medical degree are reluctant to work in the countryside, especially at the township and village levels. As part of its effort to improve primary care, the government is launching a number of pilot programs to incentivize physicians from large hospitals to practice in local clinics. However, since physicians earn their main income from fees instead of salaries, working with poorer patients in under-used local clinics is not very attractive. According to Ms. Boynton, even in cities, doctors are unhappy, and are looking to either move abroad if they have the qualifications or switch to the hospital administrator side of the system.¹⁸⁸

Market Access for U.S. Medical Goods and Services

Why U.S. Companies Do Business in China’s Healthcare Sector

Major U.S. companies are cognizant of the problems in China’s healthcare system. And yet, the China market is now central to U.S. business strategy. Biopharmaceutical products represent a growing net export from the United States to China, increasing by 28 percent every year for the last ten years to \$1.4 billion in 2013.¹⁸⁹ Pfizer, the largest U.S. pharmaceutical company, claims it is “the top multinational R&D-based biopharmaceutical company in China.” Its China subsidiary has cumulative investments of \$1 billion; business operations in over 300 Chinese cities; four state-of-the-art manufacturing facilities; and over 9,000 employees (business, R&D, production and other areas).¹⁹⁰ Mr. Hunter, speaking on behalf of PhRMA’s member companies, said he expects his members’ presence in China to “only strengthen in time.” This presence is no longer limited to production and sales: International drug makers are now bringing as much as \$8 billion per year in R&D investment to China.¹⁹¹ United Family Healthcare, the healthcare services division of the U.S. company Chindex International Inc., is China’s largest foreign-invested healthcare provider.¹⁹²

A variety of factors explain this turn to the China market. As Mr. Shobert observed, “[China] is no longer just an alternative geography where you can find a lower-cost supply partner. It’s also somewhere you can sell into.”¹⁹³ China’s healthcare boom is also occurring at a time when mature markets are losing luster. After decades of escalating costs, healthcare providers in Europe, Japan, and the United States are under pressure to make care affordable. Governments and households, still hurting from the 2009 financial crisis, are eager to reduce their debt burdens by cutting the cost of healthcare goods and services. In parallel, there has been a precipitous decline in pharmaceutical R&D productivity since the 1980s.¹⁹⁴ According to Bain & Company, pharmaceutical companies

will lose more than \$100 billion in patent protection by 2015, as key patents expire.¹⁹⁵

U.S. companies could turn to other developing markets, but most are smaller and present their own regulatory challenges. Mr. Hunter argued that China is faring better than India: “People have talked . . . about the challenges to the Chinese system, but if you were just to turn a little bit farther to the West, you’d find a country of a similar size that is vastly worse off.” India spends only 1.5 percent of GDP on healthcare. Because most Indians are uninsured, at least 70 percent of spending is out of pocket. Rural residents barely have access to care. All told, China’s healthcare sector “is decades or at least a decade ahead.”¹⁹⁶ An additional advantage of operating in China is that it has a large aging population compared with other emerging markets.

Witnesses told the Commission that the risk of intellectual property (IP) theft is not sufficient reason to avoid the China market. Mr. Hunter noted that India has pursued an aggressive policy to market generic drugs and rewrite the World Trade Organization’s Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS). Although patented drugs only account for 5 percent of the Chinese market, the figure is less than 1 percent in India.* China also helps U.S. pharmaceutical companies recoup R&D costs. Said Mr. Hunter: “If you don’t take your product to a market, you don’t work the patent in a market, and somebody else can use it. . . . It’s either you use it or lose it.” As for why U.S. drug makers would engage in R&D in China despite the risk of losing IP, Mr. Hunter pointed to China’s large pool of well-qualified scientists, and to the need to adapt U.S. drugs to Asia’s patient profiles.¹⁹⁷

Ralph Ives, executive vice president for global strategy and analysis at AdvaMed, acknowledged that IP theft is a concern in the medical device segment as well, especially when counterfeits do not perform like the original and put patient safety at risk. Yet such risks are mitigated by the innovation model of the medical device industry, which is different from pharmaceuticals. New medical devices come out about every 18 months, which reduces the incentive for counterfeit, since the fakes quickly become outdated. Higher value-added devices (e.g., implants) are usually sold in China through business-to-business transactions. That allows device makers to develop a direct relationship with doctors at hospitals, who themselves have an intrinsic interest in buying high-quality devices that are safe for their patients.¹⁹⁸

Closer analysis of market access issues, however, indicates that U.S. companies are incurring substantial risks by operating in China. Said Mr. Shobert:

In my [consulting] practice, we work pretty hard to get people to say no [to entering China], and that’s not because we’re fundamentally hostile to China, but simply [because]

*Stated Mr. Hunter: “India has had for some time a strong generics industry, and when it came time to implement its WTO obligations with TRIPS, the generics industry was very influential in the final drafting of the legislation that was passed in 2005, and it includes a series of provisions that undercut those commitments. We’ve seen in the case of India over the past two years either the disallowance or the attack in one form or another on the patents on some 15 products of which there are only 45 patented products in the market.”

*we want any new entrant to China to understand at the most basic level within their organization—and this goes all the way to the top, especially when you’re talking about compliance risk—selling into the healthcare economy in China is inherently a political act.*¹⁹⁹

China’s Medical Services Market

In contrast to drug and device makers, U.S. healthcare providers have yet to penetrate the Chinese market on a significant scale. They currently focus on delivering premium care to wealthy and privately insured patients in tier-1 cities like Shanghai and Shenzhen. But China’s need for high-tech facilities, as well as user-friendly spaces for the elderly, is raising demand for U.S. healthcare services. Given the current price pressures on drug makers, Bain & Company forecasts that hospitals will account for 40 percent of healthcare profit growth in China through 2020.²⁰⁰ Less than 2 percent of China’s senior population currently uses institution-based care, but more than 10 percent are willing to receive care in institutions.²⁰¹

Some promising projects are in progress. Medical device manufacturers across the world are vertically integrating into after-sales services, sometimes through in-house clinics. The U.S. company Chindex, for example, operates healthcare facilities across China, and also produces medical devices used in those facilities.²⁰² A Harvard-affiliated U.S. hospital, Brigham & Women’s, is reportedly exploring the “possibility of collaborating” with Evergrande Real Estate Group Ltd., a Chinese real estate company, to build a state-of-the-art hospital in China.²⁰³ In addition, the U.S. firm Henningson, Durham & Richardson signed an agreement with a Chinese company to jointly supply architectural planning and concept design for the proposed Beijing International Medical Center, a state-invested facility that aspires to become the largest healthcare education and research center in the world.²⁰⁴

Premier Li has also hinted that China will permit more “non-governmental capital” into the healthcare sector. In August 2014, the Ministry of Commerce and the National Health and Family Planning Commission announced a pilot program that will allow foreign investors in some parts of the country to set up new hospitals. The program will apply to Beijing, Tianjin, and Shanghai municipalities, as well as to the provinces of Jiangsu, Fujian, Guangdong, and Hainan. That followed a decision in July to let the German hospital operator Artemed Group establish China’s first hospital fully funded by foreign capital, based in the Shanghai Free Trade Zone.²⁰⁵

China's Medical Services Market—Continued

Despite these advances, it is uncertain whether foreign investors will be permitted to make full acquisitions of China's public hospitals. It may also prove difficult for U.S. companies to expand beyond the premium segment in the largest cities, if efforts to rein in healthcare costs put pressure on pricing and give preference to cheaper local providers. U.S.-style institution-based elderly care is too expensive for the mass of retirees and has been criticized by those who think the elderly should be cared for by their children, or at the very least receive community-based care.²⁰⁶

Corruption in the Chinese Healthcare System

The potential risks of operating in China were on display last year, when Chinese authorities began looking into allegations that the British drug maker GlaxoSmithKline (GSK) had funneled money through a local travel agency to pay bribes to doctors in return for prescribing its drugs. While the legal outcome dragged on, GSK reported that its third-quarter 2013 China sales fell 61 percent.²⁰⁷ In September 2014, a secret one-day trial was held in a Chinese court to adjudicate the case. GSK was fined nearly \$500 million, the highest fine on record against a foreign company. According to Xinhua, China's official news agency, the court also sentenced GSK's British former country manager and four other company managers to prison terms of up to four years. It suspended the sentences, however, allowing the defendants to avoid incarceration if they did not engage in further wrongdoing. GSK said in a statement that it "fully accepts the facts and evidence of the investigation, and the verdict of the Chinese judicial authorities."²⁰⁸

Other companies were targeted on bribery charges as well. The drug makers Sanofi (France), Bayer (Germany), AstraZeneca (United Kingdom—Sweden), and Eli Lilly and Company (United States), all reported visits from authorities to their China offices in August and September of 2013. Sanofi was accused of bribing over 500 Chinese doctors with \$277,600 in illicit payments.²⁰⁹ Nu Skin Enterprises, a listed U.S. company that develops personal care products and dietary supplements, was charged in January 2014 with operating an illegal pyramid scheme. The allegations were first lodged by *The People's Daily*, China's Party-run newspaper, which also accused Nu Skin of using direct-marketing methods "akin to brainwashing." Following publication of the report, China's State Administration for Industry and Commerce (SAIC) launched an investigation.²¹⁰

If a U.S. company had acted the way GSK did, it would likely have violated the U.S. Foreign Corrupt Practices Act, inviting substantial penalties in U.S. federal courts. In Ms. Boynton's opinion, the GSK case also signaled a sincere effort by the Chinese government to rein in escalating healthcare costs. The investigations put many foreign pharmaceutical companies in the spotlight but were not exclusively antiforeign. China National Pharmaceutical Group

Corporation (Sinopharm Group), China's largest state-owned drug distributor, was also targeted.²¹¹

Mr. Shobert, however, drew a negative conclusion from the GSK case. Although GSK did what it was accused of doing, the argument that the company behaved unethically is "convenient but not entirely accurate." He argued that bribery is a "reality of doing business" in China's healthcare sector:

*You pay this money to your doctor to be seen, and you pay that money to see a specialist, and you pay that money to jump to the front of the line. And you pay that money to get drugs that actually are high quality. Behind the scenes the same type of red envelope payments takes place between pharmaceutical sales representatives, dealers, [and] hospital administrators.*²¹²

Mr. Shobert further claimed that the GSK case is emblematic of aggressive tactics being taken by the Chinese government against foreign companies. The government not only seeks to benefit domestic companies, but also to promote the public perception that it is combating the escalation in healthcare costs. In 2012, the NDRC investigated four drug classes comprising over 500 different drugs, after which prices dropped by 17 percent. GSK reacted to the allegations in its case by agreeing to reduce its drug prices, as other foreign companies have done in response to the antimonopoly law.²¹³

These actions reflect the Chinese government's aggressive and prejudicial use of antitrust litigation. China's antimonopoly law, enacted in August 2007, is applied by the NDRC, the SAIC, and the Ministry of Commerce to hold companies accountable for anti-competitive agreements, abuse of a dominant position, or mergers that would lead to a dominant position. The law also calls for China to establish a review process to screen inward investment for national security implications.²¹⁴ The U.S. Trade Representative has complained that, even though the assets of state-owned enterprises account for 42 percent of the total assets of Chinese industrial enterprises, the market position of state-owned enterprises has been strengthened through administrative mergers that may not have been subject to review under the new antimonopoly law. At the same time, the law has been used as a pretext to block foreign investors, shielding selected Chinese domestic enterprises, even inefficient or monopolistic enterprises, from foreign competition.²¹⁵ The law has been applied with greater intensity in 2014, most recently against foreign automotive manufacturers.²¹⁶

Technology Transfer and Clinical Trials

Foreign drug makers are setting up state-of-the-art R&D facilities in China. This trend has coincided with government policies to spur innovation in the life sciences. In 2008, the Chinese government unveiled the New Drug Creation and Development Program, creating 20 incubator sites for life science innovation. The 12th Five-Year Plan (2011–2015) mandates that 4 percent of the country's GDP be derived specifically from the life science sector by 2015, and sets aside \$10 billion in funding. Said Mr. Shobert: "As

a result of China's goals, American companies have found they now must begin to allocate funding towards R&D directed specifically at bench science, product development and clinical trials completed in China." One example is Merck and Co.'s late 2011 announcement that it would be spending \$1.5 billion to improve its R&D capacity in China. Mr. Shobert argued that, just as China has conditioned market access on technology transfer in the renewable energy equipment sector, it is now doing so in life sciences, the next emerging industry.²¹⁷

In the near term, China is not expected to compete as a drug innovator. Only 9 percent of domestic pharmaceutical sales are attributed to non-generic brands. At \$150 billion, China's spending on drug R&D is only about one-third that of the United States.²¹⁸

Mr. Hunter told the Commission that his members are less concerned about China's state-led innovation efforts. He argued that it will be difficult for China to imitate the U.S. innovation system, which combines robust IP protection with synergistic relationships among the National Institutes of Health, U.S. universities, and pharmaceutical manufacturers. China's efforts to control drug pricing could also discourage capital-intensive drug innovation, and would have to be offset by substantial government subsidies. To the extent that China is innovating, it is doing so via its private sector; for example, the Chinese drug maker Tasly Phar. International Co. Ltd. has a cardiovascular product that is in phase III clinical trials in the United States.²¹⁹

Nonetheless, the Chinese government appears to be acquiring data from U.S. companies in ways that violate its WTO commitments. At the 2012 JCCT talks, China agreed to "define new chemical entities in a manner consistent with international research and development practices in order to ensure regulatory data of pharmaceutical products are protected against unfair commercial use and unauthorized disclosure."²²⁰ The impetus for this agreement stemmed from complaints that China is not providing six years of data protection to U.S. patent drugs, as is set forth in its WTO commitments. This problem is directly attributable to China's State Intellectual Property Office (SIPO), which uses a poorly defined phrase, "new chemical entity," that has allowed Chinese pharmaceutical manufacturers to receive approval from the CFDA before the six-year period of protection that China's IP laws establish.²²¹ The U.S. Trade Representative has also expressed concern with SIPO's interpretation of Article 26.3 and related provisions of China's Patent Law, which govern information disclosure requirements for pharmaceutical patent applications. SIPO: (1) requires the disclosure of more information than that sought by its counterparts in the United States; (2) requires all of this information be disclosed at the time of application, instead of permitting supplemental disclosure filings under appropriate circumstances; and (3) has retroactively applied the new standards in Article 26.3 to invalidate some older patents.²²²

A related concern is China's onerous clinical trial process. It takes an average of eight years for an existing U.S. patented drug to be re-patented in China, and therefore, to reach Chinese patients who could already be benefiting from innovative drugs available in the United States. For drugs that have a patent life of

around 15 years, this delay can substantially affect a drug maker's ability to recoup R&D costs. The Chinese government fails to compensate this loss by extending periods of market exclusivity. These delays are also damaging to China. For example, in the case of cancer, terminally ill patients may be denied access to state-of-the-art medications from the United States. Slow domestic clinical trials also hamper China's ability to participate in global R&D.²²³

Rather than simply registering a clinical trial with the government, U.S. drug makers must first apply for permission. This can be a drawn-out process, due to staffing limitations at the CFDA. Once clinical trials begin, they undergo the same process as a full approval; in contrast to most major economies that market U.S. drugs, China does not make adequate use of clinical trial data available for the same drug from the FDA.²²⁴ Chinese regulators have also been holding up or invalidating U.S. pharmaceutical patents by charging that the application contains insufficient information, without allowing companies to supplement information after the initial filing. At the 2013 JCCT talks, China "affirmed" that it would end this practice, and that it would "ensure that pharmaceutical inventions receive patent protection during examinations and re-examinations and before China's courts."²²⁵

According to Mr. Ives, clinical trials can delay the release of some U.S.-origin medical devices in China. FDA-approved products require re-approval by Chinese regulators, and the device has to be approved first by the FDA before it can begin the registration process in China. These regulatory hurdles could increase substantially under China's proposed amendment to the Medical Device Law, released in March 2014. The amendment could impose hundreds of new requirements on foreign device makers, including indigenous standards for serial number tracking.²²⁶

Distribution, Pricing, and Reimbursement

Once a U.S. drug or device hits the Chinese market, it faces further hurdles. To lower the cost of drugs, the MOH introduced a National Reimbursement Drug List (NRDL) in 2004, which designated 1,027 Western drugs eligible for reimbursement from state-run insurers and to be given preference by state-run hospitals.* In 2009, the same year that China greatly expanded health insurance coverage, an updated NRDL was published and supplemented by the Essential Drug List (EDL), a shorter compendium of generic drugs to be sold by grassroots providers at no markup.

The use of these lists has put U.S. drug makers in an uncomfortable position. While pricing and reimbursement lists are typically updated at least on an annual basis around the world, in China, the last update was in 2009. China's own laws dictate that updates should occur every two years. Effectively, all the U.S. drugs that have entered the market since then have not been eligible for reimbursement. Foreign drugs not on the lists can achieve moderate success in China, particularly for advanced treatments. Reimbursements can be negotiated individually with providers. But U.S. drug makers like Pfizer, Johnson & Johnson, and Merck derive signifi-

*These numbers exclude the traditional Chinese medicine products that account for over half of the NRDL.

cant sales from drugs that are on the lists.²²⁷ The drug list policy also harms Chinese patients who, in addition to not enjoying timely access to the latest drugs, may not get adequate reimbursement for them.

A revised NRDL, due out in 2014, could place additional foreign drugs to the list. U.S. drug makers, however, will be forced to participate in reimbursement drug bidding, an opaque process that varies by region and often favors the lowest bidder, while giving less consideration to quality or to the costs incurred in developing and producing the drug.²²⁸

Widespread state ownership of pharmacies and providers has further hindered the introduction and distribution of U.S. products. Small clinics, for instance, are expected to sell only the essential drugs on the EDL, excluding foreign drugs deemed “non-essential.” According to Marc de Garidel, CEO of French drug maker Ipsen, doctors at public hospitals can be “paid by the state” to refuse foreign drug makers’ sales representatives.²²⁹ In light of these risks, foreign drug makers have come to rely heavily on local pharmaceutical distributors to navigate the process. Getting these companies involved, however, siphons off profits that could be pocketed by the drug makers themselves. Conflict of interest is magnified in the case of Sinopharm Group, a Hong Kong-listed, central state-owned enterprise that distributes medicines and runs retail pharmacy chains, but also researches, develops, and manufactures its own medicines.²³⁰

The medical device sector faces a series of regulatory hurdles as well. The Chinese government has required hospitals and clinics to acquire medical devices at the provincial level. Foreign medical devices are frequently subject to price ceilings or are prevented from competing in local tendering.²³¹ U.S. government and industry representatives have opposed these practices since they were first instituted by the NDRC in 2006. Although China at the 2012 JCCT talks vaguely committed to “taking into account comments from the United States on this issue,” its amended Medical Device Law, released this year, appears to make matters worse. Said Mr. Ives:

*It is expected that the revision to this law will impact all aspects of China’s regulatory system (clinical trials, testing, inspections, evaluations, re-registration, post-market surveillance, etc.). We have already seen more than 20 new requirements with significant impact to our industry over the past year, and expect to see hundreds more as the revision is implemented.*²³²

Of particular concern to the device industry is China’s implementation of Unique Device Identifiers (UDI), a bar code that will be required on all medical technology products. The ostensible purpose of UDI is to improve patient safety by allowing regulators to identify devices throughout distribution and use, akin to “track and trace” technology being adopted in the United States. But while the U.S. rule is based on international standards—in conjunction with the International Medical Devices Regulators’ Forum—Mr. Ives expressed concern that China is contemplating a “home grown” UDI system that would not be consistent with the global approach. U.S.

device companies would spend huge sums to comply with China's indigenous standards throughout the supply chain.²³³

Implications for the United States

Healthcare, still a marginal issue in U.S.-China relations, has the potential to become a positive and stabilizing force, at a time when bilateral disputes in other areas remain unresolved. The FDA is building constructive relationships with its Chinese counterparts, as pandemics and food and drug safety issues have forged a stronger partnership under duress. On the corporate side, the sheer size of China's market has compelled U.S. drug and device makers to do business there. Sourcing cheap ingredients is an important motive, but so are China's large pool of patients and its deepening role in developing drug products for the Asian market. Net exports of biopharmaceuticals to China can help remedy the bilateral trade imbalance. U.S. companies can help China to upgrade its pharmaceutical production and inform regulators on best practices.

U.S. policy and corporate interests could complement China's objective to make healthcare provision equitable and efficient. Policy documents and statements, such as the Third Plenum Decision, suggest that the new party leadership is indeed interested in modifying existing market structures and regulatory frameworks to bridge rural-urban gaps, realign incentives for medical professionals, and permit a larger number of foreign and private companies into emerging market niches, such as long-term care. Lower rates of precautionary saving could raise consumption among Chinese households, and with it, consumer demand for U.S. goods and services.

The reality, however, is that China's healthcare system is in dire need of repair. The reforms undertaken in 2009 introduced generous fiscal spending but could not remedy escalating costs and distorted incentives that have taken root over decades. In this difficult environment, U.S. drug and device companies are struggling to market their latest cutting-edge products and to move beyond the richest Chinese consumers in tier-1 cities. They also face ethical dilemmas when dealing with regulators, competitors, partners, or clients who view corruption and bribery as part of doing business.

U.S. drug and device companies have made some use of the JCCT to address market concerns in China, but appear hesitant to rely too much on government-to-government negotiations. An example is the WTO's Agreement on Government Procurement (GPA), which China has not signed, and which could potentially resolve the issues that U.S. companies face at the local level in China. Mr. Hunter said: "I am not sure going to USTR [U.S. Trade Representative] to complain about GPA is the most effective means, but we certainly engage with [China's Ministry of Health], the relevant ministries, and at the provincial level to urge expeditious updates of the reimbursement list to begin that complicated process."²³⁴ Referring to counterfeiting in the device industry, Mr. Ives said that "so far, [our members] have not wanted to pursue [remedies] through the USTR." Device makers have preferred to raise their concerns with the relevant Chinese authorities.²³⁵ These

statements raise questions about the role the U.S. government should and can play in resolving market access issues.

At greatest risk, perhaps, are U.S. consumers who continue to purchase China-origin drug products, in many cases unknowingly. The FDA has made significant efforts since the 2007–2008 heparin scandal to remedy this problem but still faces a series of obstacles. In China, increasing the number of drug inspectors has taken over two years, and inspections of API suppliers are infrequent. U.S. taxpayer funds are being used to train CFDA regulators, while the FDA has not been granted sufficient work visas or permission to conduct unannounced inspections of drug facilities. Back in the United States, the new authorities and capabilities afforded by FDASIA and DQSA will take time to be fully adopted. Drug regulation is challenged by uneven state-level oversight of wholesalers, infrequent inspections at the border, and loopholes with regard to ingredients, dietary supplements, and lifestyle drugs.

Conclusions

- China today is the world's largest producer of active pharmaceutical ingredients and inert substances. In a 2010 study of pharmaceutical executives by the consulting firm Axendia, 70 percent of respondents cited China as their top source country for pharmaceutical ingredients. China's rise as a pharmaceuticals exporter has coincided with growing reliance on drug and drug ingredient imports in the United States, which is estimated to be the top importer of China's pharmaceutical raw materials. These trends are worrying because China, by some estimates, is also the world's leading supplier of fake and substandard drugs. Tainted heparin, which contained ingredients sourced from China, claimed at least 81 lives in the United States in 2007–2008. More subtle risks of unsafe drugs include inadequate dosages of active ingredients, impure ingredients, and false packaging.
- Since 2007, the Food and Drug Administration (FDA) has taken important steps to improve drug safety regulation. In China, the FDA is expanding its team of drug inspectors, increasing the frequency of inspections, and working closely with its Chinese counterparts at the China Food and Drug Administration. In the United States, Congressional legislation has given the agency more authority to hold companies accountable for their supply chain safety, collect user fees from companies to finance regulatory efforts, seize unsafe products at the border, and track-and-trace products via serial numbers. The agency has also transitioned to an electronic, risk-based surveillance system known as PREDICT.
- There is much work to be done to improve drug safety in the United States. Regulating China's vast drug industry, especially the production of precursor chemicals by semi-legitimate companies, is a severe challenge. China's own drug safety regulation is fragmented and decentralized and lacks civil society monitoring. The FDA's China offices have had trouble securing work visas for new inspectors and conducting unannounced factory inspections.

- Alongside its role as a pharmaceutical producer, China is undergoing an epidemiologic and demographic transition that is fundamentally changing the country's demand for healthcare. Chronic and non-communicable diseases are on the rise, due to an aging population and to a worrying decline in public health, caused by pollution, poor diet, and other factors. A more affluent and urbanized population is seeking better quality care. Some experts estimate China's healthcare spending to increase from \$357 billion in 2011 to \$1 trillion in 2020, making China the second-largest market after the United States.
- At present, China's healthcare market is ill equipped to meet the rise in demand for care. Relative to wealthier countries, doctors and hospital beds are in short supply. Healthcare spending is only 5 percent of gross domestic product, compared to an average of 9 percent in Organization for Economic Cooperation and Development countries. To remedy this situation, the Chinese government launched ambitious healthcare reforms in 2009 that aim to extend basic government-subsidized health insurance, expand the population health benefit package, strengthen primary care by constructing new clinics, control the price of essential drugs, and reform government-owned hospitals. Fiscal spending to support these reforms totaled some \$371 billion in 2009–2012.
- Not all of China's healthcare reforms have succeeded, and serious problems remain. Expanded insurance coverage has had some success in reducing rural-urban gaps and out-of-pocket spending. But the insurance coverage of migrant workers is not portable, and coverage is limited for costlier drugs and treatments. The absence of a functioning referral system has led to overcrowding in large hospitals and underutilization of local providers.
- On the supply side, most of China's public funding increases for healthcare have gone toward brick-and-mortar investments and new machines, rather than increases in doctors' salaries. Prices and fees are subject to government interference, which incentivizes doctors to undersupply basic services and oversupply costly drugs and treatments. The net result is that hospitals are short of qualified staff and rely excessively on drug revenues, while healthcare spending is rising on the back of escalating costs rather than improvements in care. Private sector providers operate on an uneven playing field and have done little to improve overall delivery.
- U.S. companies that market drugs, medical devices, and healthcare services view China as an important opportunity, not only to source cheap inputs, but also to market goods and conduct research and development. An important impetus to focus resources on China is slowing demand and changing regulation in the United States, as well as a lack of other markets that match China in terms of market size and level of development.
- Market access for U.S. drug and device makers remains restricted. Companies are concerned about being targeted by China's recent anticorruption drive and indiscriminate use of its antimonopoly law, which ostensibly aim to lower healthcare costs

but serve to disadvantage foreign companies. China's process for approving new drugs leads to excessive data transfers. Loopholes in China's intellectual property laws allow local drug makers to reproduce U.S. patent drugs prematurely. Onerous clinical trials, combined with state interference in tendering, pricing, and reimbursement, cause delays of up to eight years for state-of-the-art U.S. drugs, and make these drugs prohibitively expensive for ordinary Chinese patients. U.S. device makers are concerned as well about proposed amendments to China's Medical Device Law, published in March 2014. The amendment could impose hundreds of new requirements on foreign device makers, including indigenous standards for serial number tracking.

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233. U.S.-China Economic and Security Review Commission, *Hearing on China's Healthcare Sector, Drug Safety, and the U.S.-China Trade in Medical Products*, written testimony of Ralph Ives, April 3, 2014.

234. U.S.-China Economic and Security Review Commission, *Hearing on China's Healthcare Sector, Drug Safety, and the U.S.-China Trade in Medical Products*, testimony of Rod Hunter, April 3, 2014.

235. U.S.-China Economic and Security Review Commission, *Hearing on China's Healthcare Sector, Drug Safety, and the U.S.-China Trade in Medical Products*, testimony of Ralph Ives, April 3, 2014.

SECTION 4: U.S.-CHINA CLEAN ENERGY COOPERATION

Introduction

The United States and China have a long history of bilateral clean energy cooperation, both through official channels and among private and nongovernmental actors. Both nations have seen some benefits from the technology-sharing relationship as have neighboring nations whose skies and waterways have been subject to increasing levels of pollution from the rapidly industrializing China. After a slow start, the benefits of some of the cooperative energy programs are only now being recognized. Future efforts, particularly in joint research and development, will require more assessment and measurement of progress if the many programs are to retain public and industry support.

This section, which draws from the April 25 Commission hearing on U.S.-China clean energy cooperation and other sources, continues the Commission's examination of China's rapidly growing domestic energy needs, its attempts to implement clean energy policies, and the opportunities and challenges that exist for bilateral cooperation in these areas. This section will focus on the facilitation by the governments of the United States and China of cooperative activities aimed at improving the efficiencies of conventional energy sources such as coal, natural gas, and nuclear.* Through several case studies, this section explores the role of U.S. government agencies, universities, and businesses in this cooperation. The section concludes by assessing the implications of such cooperation for U.S. national interest.

U.S.-China Clean Energy Cooperation Policy

In a briefing to the Commission, Jonathan Elkind, acting assistant secretary for International Affairs at the U.S. Department of Energy (DOE), said the United States cooperates with China on clean energy both "because we need to and because we want to," pointing to shared interest in protecting the environment and creating business opportunities.¹ Indeed, the two countries share many energy and climate challenges. The United States and China lead in global energy consumption and rely on the abundant domestic coal resources to provide energy, which results in carbon dioxide (CO₂) emissions. China is the world's largest emitter of CO₂ (26 percent of world emissions in 2010), followed by the United States (17 percent),² and their joint efforts are necessary for suc-

*For a discussion of wind and solar industries see U.S. Economic and Security Review Commission, *2010 Annual Report to Congress*, November 2010, pp. 183-210. http://origin.www.uscc.gov/sites/default/files/annual_reports/2010-Report-to-Congress.pdf.

cessful global reduction. Both countries are investing in renewable resources, such as wind and solar, while also working on increasing efficiencies and reducing pollution by making conventional energy sources, such as natural gas and coal, cleaner.

China's environmental problems pose some of the most pressing challenges for Chinese leaders. The combination of its large population, rapid economic growth, and lax environmental enforcement has led China to consume more energy with each year and emit ever more toxins into the air and water. A major international study found that air pollution contributed to 1.2 million premature deaths in China in 2010.³

China's heavy reliance on coal for energy generation, industrial production, and heating is a major contributor to its environmental woes. While use of nuclear and renewable energy is growing rapidly, they remain minor energy sources, and are not expected to soon replace coal in a substantial way.⁴ According to latest data from the U.S. Energy Information Administration, coal supplied 69 percent of China's total energy consumption in 2011 (see Figure 1).⁵ The corresponding figure for the United States was far lower, at 20 percent.*

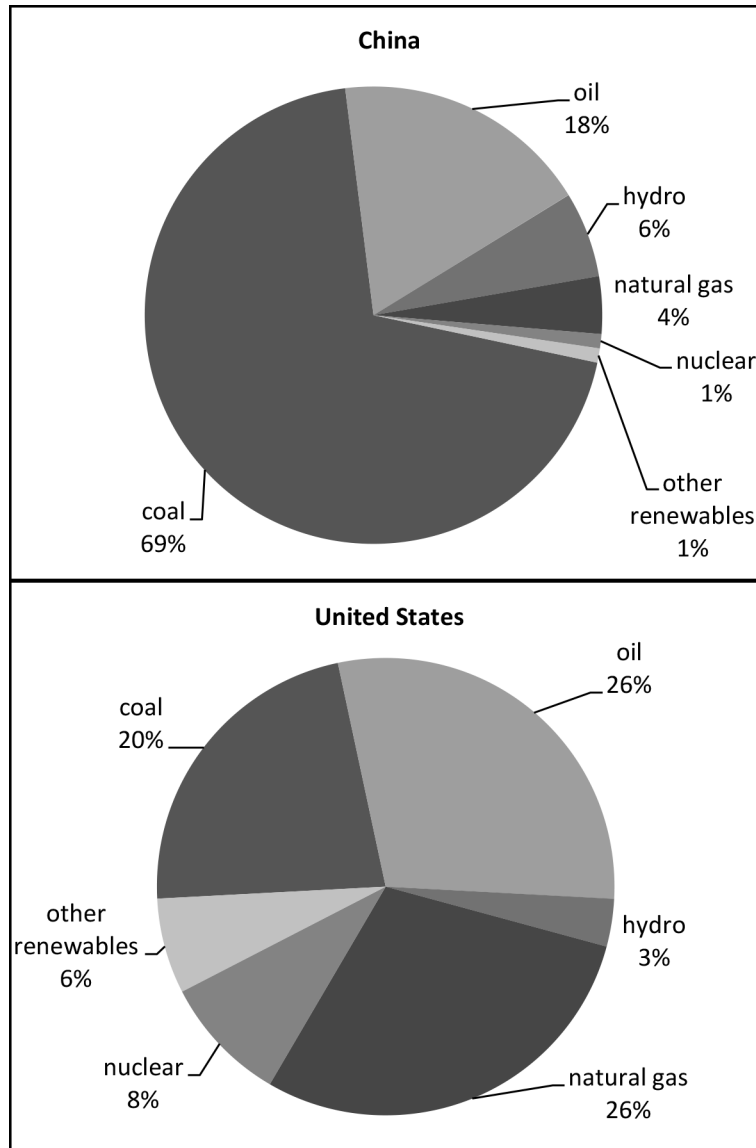
The Chinese leadership, through consecutive Five-Year Plans, has placed increasing emphasis on reducing pollution and energy consumption through regulation and promotion of clean energy and technologies.† China has stated it plans to cap coal use below 65 percent by 2017 and to raise non-fossil fuel energy consumption to 15 percent of the energy mix by 2020 (though consumption of coal will continue to rise in absolute terms).⁶ In addition, the 12th Five-Year Plan sets targets for increasing energy efficiency and carbon efficiency of the economy by 16 percent and 17 percent, respectively.⁷ The government reemphasized its commitment to promote an "ecological" civilization during the 2014 National People's Congress, promising to "declare war" on pollution and providing some concrete targets for reducing energy inefficiency.‡

Coal and peat also dominate China's electricity generation, accounting for almost 80 percent of China's electrical capacity in 2011. Although coal and peat are the largest fuel source for the U.S. electricity market, the energy mix is much more diversified (see Figure 2). Coal and peat account for only 43 percent of U.S. electricity generation.

*The United States holds the world's largest estimated recoverable reserves of coal and is a net exporter of coal. In 2012 U.S. coal mines produced more than a billion short tons of coal and more than 81 percent of this coal was used by U.S. power plants to generate electricity. <http://www.eia.gov/coal/>. According to EIA, in 2012 China was the third biggest market for U.S. coal (9 percent of the total) behind the Netherlands (12 percent) and UK (11 percent). In 2012, the U.S. was the eighth largest source of Chinese coal imports behind Indonesia, Australia, Mongolia, Russia, Vietnam, South Africa, and North Korea.

†For an in-depth analysis of Chinese government's policies supporting the clean energy sector, see U.S. Economic and Security Review Commission, *2010 Annual Report to Congress*, November 2010, pp. 183–210. http://origin.www.uscc.gov/sites/default/files/annual_reports/2010-Report-to-Congress.pdf.

‡For more details on the *2014 National People's Congress and the Government Work Report*, see Nargiza Salidjanova and Jacob Koch-Weser, *China's 2014 Government Work Report: Taking Stock of Reforms* (U.S.-China Economic and Security Review Commission, April 1, 2014). http://origin.www.uscc.gov/sites/default/files/Research/USCC%20Backgrounder_NPC%20scorecard.pdf.

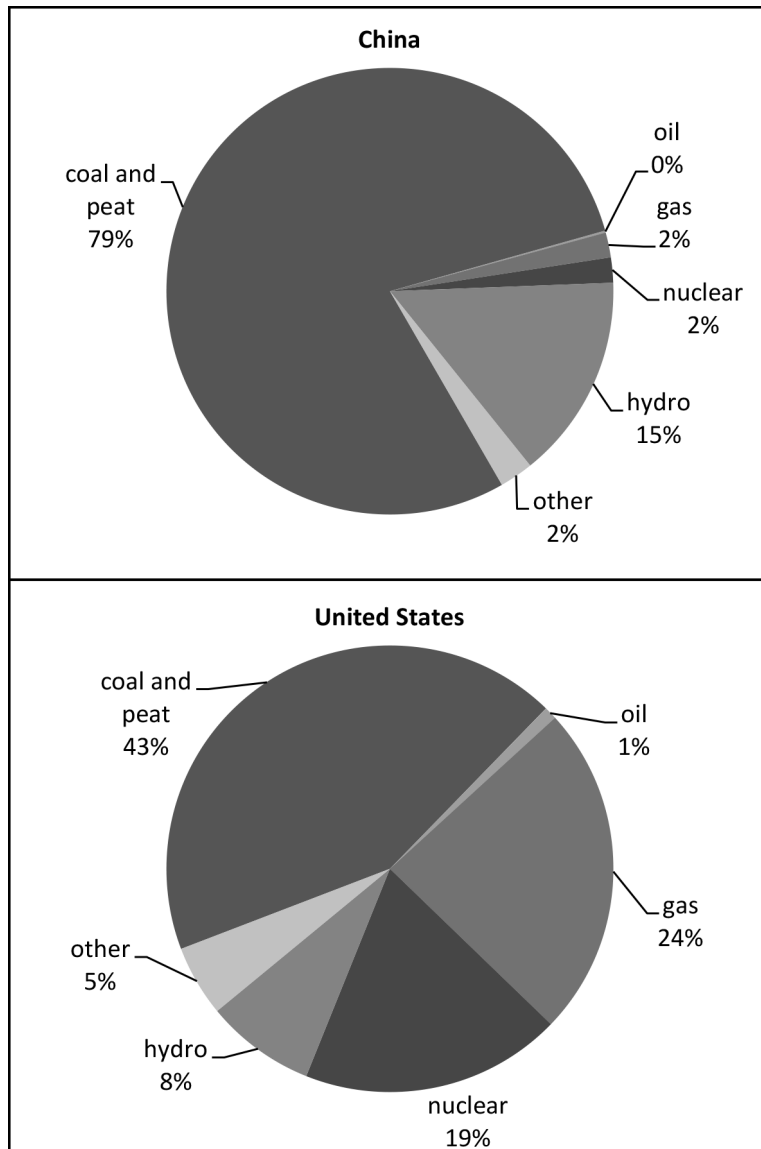
Figure 1: Total Energy Consumption by Type, 2011

Source: U.S. Energy Information Administration, *International Energy Statistics*.

China is the world's largest investor in clean energy (it surpassed the United States in 2012). In 2013 alone, China's combined public and private investment in that sector reached \$61.3 billion, or about one quarter of the \$254 billion world total.⁸ But even as China's spending on clean energy development surpasses all other nations, its consumption of fossil fuels is still growing much faster

than its consumption of clean energy. For every gigawatt (GW) of new solar capacity that China added in 2013, for example, China added 27 GW of new coal capacity.⁹

Figure 2: Total Electricity Generation by Source, 2011



Source: International Energy Agency. <http://www.iea.org/statistics/statisticssearch/>.

In 2013, U.S. public and private investment in clean energy totaled \$48.4 billion, the second largest national investment globally.¹⁰ The Obama Administration has set a goal for the United States to generate 80 percent of its electricity from clean sources by 2035,¹¹ and has sought to fund and incentivize an array of activities to help the country reach this milestone (U.S. Energy Information Administration estimates that coal-fired power plants will continue to be the largest source of electricity generation in the United States, though coal's share of total U.S. power generation will decline from 42 percent in 2011 to 38 percent in 2025 and 35 percent in 2040).¹² As clean energy alternatives have become more viable, the U.S. private sector has also deepened its investments, resulting in dynamic market growth and technological advancement.

With so much combined investment focused on clean energy, the potential opportunities for both countries are immense, and U.S. and Chinese governments have endorsed cooperation. Many experts argue that U.S.-China cooperative initiatives “could increase the capacity and reduce the cost of new energy technologies, which over the long term will produce economic, energy, and environmental security benefits on both sides of the Pacific.”¹³

At a 2011 Brookings Institution seminar, Zhou Dadi, vice chairman of the China Institute for Innovation and Development Strategy, urged cooperation because it “provides each side with access to the specialized expertise of the other ... increases the diversity of approaches that can be investigated ... and speeds up progress on both sides.”¹⁴ U.S. businesses are also interested in cooperation, given the substantial economic opportunities that exist in the clean energy field.¹⁵ At an energy cooperation event in Beijing in April 2013, Secretary of State John Kerry summed up the opportunities:

*The energy market that we are talking about here today, the energy market of the future, is a \$6 trillion market with five billion users today and growing to perhaps nine billion users over the next 40 years. This is the largest of all markets ever imagined on the face of this planet.*¹⁶

However, the tremendous opportunities of U.S.-China clean energy cooperation are tempered by significant obstacles, stemming primarily from China's lax protection of intellectual property rights and China's use of allegedly WTO-illegal subsidies to promote its clean energy sector.* The Chinese government's deployment of massive resources toward developing clean energy technologies—such as tax breaks, preferential financing, access to government contracts and other incentives—is a major challenge confronting proponents of U.S.-China clean energy cooperation, and may have damaging consequences for the U.S. energy sector and economy.¹⁷ As a result of the anticompetitive aspects of Chinese policies, U.S.-China trade disputes involving clean energy industries have proliferated.

*For an in-depth analysis of Chinese government's policies supporting the clean energy sector, see U.S. Economic and Security Review Commission, *2010 Annual Report to Congress*, November 2010, pp. 183–210. http://origin.www.uscc.gov/sites/default/files/annual_reports/2010-Report-to-Congress.pdf.

In 2010, the United States challenged China's Special Fund for Wind Power Manufacturing at the World Trade Organization (WTO). China's program gave domestic wind turbine manufacturers special subsidies, in violation of its WTO commitments.¹⁸ Following consultations with the United States, China agreed to end the subsidies program.¹⁹ In 2012, the U.S. International Trade Commission (ITC) found that cheap wind tower imports from China were having detrimental effects on U.S. manufacturers because Chinese wind tower companies were receiving countervailable subsidies and dumping (i.e., selling below cost of production) their products in the U.S. market.²⁰

The Chinese government's heavy subsidization of the domestic solar industry—which allowed Chinese solar manufacturers to sell their products below market value—has also led to U.S. trade action.²¹ In June and July 2014, the U.S. Department of Commerce announced preliminary countervailing (CVD) and antidumping (AD) duty investigations of imports of Chinese solar panels. U.S. Customs will begin collecting duties based on the preliminary rates of 18.56 to 35.21 percent in the CVD investigation and 26.33 percent to 165.04 percent in the AD investigation.²² The final determination is expected in December 2014.

This marks the latest step in a fight over low-cost solar panels from China. In 2012, Commerce imposed AD and CVD duties on imports of Chinese solar panels, in response to a petition by SolarWorld Americas, a U.S. subsidiary of a German solar company, and a coalition of other solar manufacturers, alleging WTO-illegal subsidies from the Chinese government to Chinese producers.²³

China asked the U.S. Department of Commerce for a suspension of the duties, and for a chance to negotiate a settlement. But while the U.S. government has not yet responded to China's request, SolarWorld Americas asked the U.S. Department of Commerce to increase the duties applied to Chinese solar products in response to Chinese military personnel hacking the company's computers.²⁴ The request follows the U.S. Justice Department's indictment of five members of the Chinese military for allegedly stealing documents and files from U.S. companies, including SolarWorld (for additional information on China's use of state-sponsored cyber-theft to promote domestic companies, see Chapter 1, Section 1 of this Report.)

Public-Private Partnerships

The two countries have been cooperating for over 30 years on environmental and energy efficiency initiatives, with much of the early agreements focusing more on establishing the basic frameworks for cooperation and on energy policy discussions (see Addendum I for a timeline of U.S.-China cooperation on clean energy and climate change). In the 2000s, clean energy and climate change mitigation emerged as leading topics of cooperation between China and the United States, culminating with a series of agreements signed in 2008–2009, which moved beyond discussion and into the realm of technical cooperation.

At the June 2008 Strategic Economic Dialogue, the United States and China signed the Ten Year Framework on Energy and Environmental Cooperation, establishing goals for cooperation on clean electricity, clean water, clean air, efficient transportation, and forest conservation. During President Obama's November 2009 trip to Beijing, he used this framework as the basis for establishing a number of initiatives to enhance U.S.-China cooperation on clean energy (see Table 1).

Table 1: Government-Sponsored U.S.-China Cooperation Initiatives Signed in 2009

Initiative	Chinese Body	U.S. Body	Description
U.S.-China Clean Energy Research Center (CERC)	Ministry of Science and Technology; National Energy Agency	Department of Energy	Establishes research center focused on developing energy efficiency, clean coal, and clean vehicle technologies, including carbon capture and storage.
U.S.-China Electric Vehicles Initiative	Various public and private entities	Various public and private entities	Includes joint standards development for electric vehicles, demonstration projects in China, creation of a research and development (R&D) and manufacturing roadmap, and public education projects.
U.S.-China Energy Cooperation Program (ECP)	Various public and private entities	Various public and private entities	Provides private sector money for work in China on renewables, smart grid, clean transportation, green building, clean coal, combined heat and power, and energy efficiency.
U.S.-China Renewable Energy Partnership	Various public and private entities	Various public and private entities	Fosters collaboration on advanced wind, biofuels, solar, and grid technologies, while expanding trade in these sectors through an annual U.S.-China Renewable Energy Forum.
21st Century Coal	Various public and private entities	Various public and private entities	Creates joint ventures and other public-private partnerships on clean coal, including carbon capture and near-zero emissions coal plants.
U.S.-China Energy Efficiency Action Plan	Various public and private entities	Various public and private entities	Develops energy efficient building codes and rating systems, benchmarks industrial energy efficiency, trains building inspectors and energy efficiency auditors for industrial facilities, and convenes a new annual U.S.-China Energy Efficiency Forum.

Table 1: Government-Sponsored U.S.-China Cooperation Initiatives Signed in 2009—Continued

Initiative	Chinese Body	U.S. Body	Description
Shale Gas Initiative	Various public and private entities	Various public and private entities	Enables both nations to use experience gained in the United States to assess China's shale gas* potential, conduct joint technical studies, and promote shale gas investment in China through the U.S.-China Oil and Gas Industry Forum, study tours, and workshops.

*Shale gas is natural gas trapped within shale formations. Although the complex geology of shale gas formations makes it more difficult to extract than conventional natural gas, recent advances in hydraulic fracturing (commonly called “fracking”) have enabled gas producers to extract shale gas economically. U.S. Energy Administration, “What is Shale Gas and Why is it Important?” December 5, 2012. http://www.eia.gov/energy_in_brief/article/about_shale_gas.cfm.

Source: The White House, U.S. Office of the Press Secretary, “U.S.-China Clean Energy Announcements,” November 17, 2009. <http://www.whitehouse.gov/the-press-office/us-china-clean-energy-announcements>.

U.S.-China government-facilitated collaboration takes many forms—from sponsoring workshops where U.S. and Chinese businesses and academics meet to discuss shared challenges to providing funding for projects. Most often, the collaboration is conducted through public-private partnerships, with the U.S. government providing resources or capacity building while academic institutions, nongovernmental organizations (NGOs), foundations, and the private sector join government-established frameworks. U.S.-based environmental NGOs have sizeable China programs and engage in cooperative activities with Chinese partners. These NGOs include the Natural Resources Defense Council, the Environmental Defense Fund, and the World Resources Institute.

One example of such public-private partnerships is work done by the U.S. Trade and Development Agency (USTDA), which focuses on trade capacity building initiatives, technical assistance, and pilot projects in the transportation, energy, information technology, and healthcare sectors. In 2013, USTDA completed 6 study tours and 16 workshops, conferences, and training programs for over 1,200 Chinese participants in the areas of transportation, energy, water and environment, healthcare and emergency response, and antimonopoly law. According to USTDA, its China projects have facilitated over \$8.1 billion in exports since 2001, including over \$960 million in new exports in 2013.²⁵ USTDA reports that in 2013, 21 percent of its total China portfolio was invested in the clean energy sector.

In her testimony before the Commission, USTDA Director Leocadia Zak highlighted the Energy Cooperation Program (ECP), which USTDA supports through grants for feasibility studies, technical assistance, and workshops.²⁶ ECP is a nongovernmental organization that includes over 45 U.S. companies across ten industry subsector working groups.²⁷ Several U.S. government agencies “support the ECP’s efforts to connect Chinese decision-makers to U.S. technical expertise in clean energy,” including the Department of Commerce and the Department of Energy, which joined USTDA in signing the Memorandum of Understanding (MOU) that created ECP in 2009.²⁸

Building on the work done by USTDA to enhance cooperation with Chinese government counterparts, ECP leverages private sector resources for project development work in China, encompassing renewable energy, smart grid, clean transportation, clean coal, and energy efficiency. To support ECP and promote clean energy development in China, USTDA has funded eight Chinese trade missions to the United States, seven pilot projects in China, and six workshops for Chinese public and private leaders.²⁹

U.S.-China Clean Energy Research Center (CERC)

CERC is the most ambitious U.S.-China program for joint research and clean energy development to come out of the November 2009 meeting between President Obama and President Hu. CERC is governed by a steering committee which includes ministerial or secretary level oversight from DOE and three ministries—the Ministry of Science and Technology (MOST), the National Energy Administration (NEA), the Ministry of Housing and Urban and Rural Development (MOHURD)—from the Chinese side. According to its steering committee, CERC’s goal is to

*accelerate the development and deployment of clean energy technologies for the benefit of both countries ... by providing a supportive platform for collaborative research, protecting intellectual property, and encouraging top scientists and engineers in both countries to join forces, learn from each other, and capitalize on unique assets and complementary strengths.*³⁰

CERC’s work was launched in January 2011, with the signing of joint work plans by the participants. Its three research priorities (the consortia) are advanced clean coal technologies, including carbon capture and storage (CCS),* clean vehicles (including advanced biofuels), and building energy efficiency (for a list of CERC projects, see Addendum II). As part of the program, DOE awarded grants to research teams led by West Virginia University on clean coal, the University of Michigan on clean vehicles, and Lawrence Berkeley National Laboratory on building energy efficiency. These U.S. teams conduct joint research with Chinese teams led by Huazhong University of Science and Technology on clean coal, Tsinghua University on clean vehicles, and the Ministry of Housing and Urban-Rural Development on building energy efficiency. CERC is funded in equal parts by the United States and China, with each consortium allocating a budget of \$50 million for the first five years (\$25 million provided by the national governments matched by \$25 million from industry, universities, research institutions, and other stakeholders).³¹ U.S. funds support only U.S. researchers and Chinese funds support only Chinese researchers.

On the U.S. side, each consortium is allocated \$2.5 million per year from DOE; this is matched equally by the academic and industrial participants. On the Chinese side, there is no matching requirement. According to Hwei Peng, the U.S. director of the CERC

*Carbon capture and storage (CCS) (or carbon capture and sequestration) is the process of capturing waste CO₂ from large sources, such as fossil fuel used in power generation and other industries, transporting it to a storage site, and depositing it where it will not enter the atmosphere.

clean vehicles consortium, Chinese industrial partners only provide guidance and in-kind contributions.³² In its 2012–2013 Annual Report, CERC reported its funding plan for the duration of the first five-year phase (see Table 2).

Table 2: Multi-Year Bilateral CERC Funding Plan

Funding Fiscal Year	United States		China	Totals
	DOE	Partners	MOST & Partners	
2010	\$7.5	\$3.8	\$0	\$11.3
2011	\$7.5	\$8.7	\$12.5	\$28.7
2012	\$5	\$9.4	\$22.3	\$36.7
2013	\$8.4	\$9.7	\$15	\$33.1
2014	\$7.5	\$8.2	\$15	\$30.7
2015	\$1.6	\$2.5	\$15	\$19.1
Totals	\$37.5	>\$37.5	>\$75	>\$150

Note: Shaded areas indicate planned spending.

Source: U.S.-China Clean Energy Research Center, *Annual Report 2012–2013*, p. C1.

Management of Intellectual Property under CERC

The nature of CERC’s work is collaborative, with several participants (academic, industry, or a combination) working on each project at the same time. As of July 2014, the CERC consisted of 75 individual projects within its three consortia, of which 58 were joint. For example, the Clean Vehicles Consortium’s work on advanced batteries is conducted by representatives from University of Michigan, the Ohio State University, Beijing Institute of Technology, and Tsinghua University. Managing intellectual property (IP) resulting from such cross-national joint work is a key challenge to overcome. One of CERC’s unique features is its Technology Management Plan (TMP), which was created to address IP concerns associated with joint research and development (R&D) activities. While the TMP does not add any new IP protections that the law does not otherwise provide, TMP establishes a framework to manage any IP developed under the CERC umbrella. The TMP states that the owners of background IP retain “all right [sic], title, and interest in their background IP” and they are not required to “license, assign or otherwise transfer” it, though using it may require an appropriate license.³³ For IP created by signatories from one country only, the TMP mandates that participants agree to negotiate in good faith terms of a nonexclusive license to the other participants.

Although common elements are shared in the plan framework, each consortium has a TMP to address the unique characteristics of its individual research.³⁴ To help researchers understand the TMPs and other IP laws and practices in each country, the U.S. DOE and China’s Ministry of Science and Technology carry out a continuing program of IP education and training. The program includes legal education, technical assistance, and a series of IP workshops for CERC participants.³⁵

While the TMP was designed to manage the joint ownership of IP resulting from CERC research activities, its utility is yet to be

tested in practice, because CERC is not yet producing inventions that were jointly developed by U.S. and Chinese participants.³⁶ Protection of IP is a crucial component of promoting collaborative innovation, yet lack of joint IP from CERC research projects points to a longstanding mistrust of China's lax IP protections. Joanna Lewis, an expert on China's energy policy at Georgetown University, noted that the TMP "does not seem to have sufficiently changed" behavior of CERC participants with regards to their willingness to share IP or co-develop IP with Chinese participants. U.S. participants are reluctant to share IP likely because "although the TMP provides IP protection on paper, in practice there is still much skepticism about its enforceability."³⁷

CERC Cooperation Case Study: Advanced Coal Technology Consortium (ACTC)

The Advanced Coal Technology Consortium (ACTC) is led jointly by James Wood, West Virginia University (WVU) and Zheng Chuguang, Huazhong University of Science and Technology. The U.S. side of the ACTC is headquartered in the WVU National Research Center for Coal and Energy, located in Morgantown, WV. The consortium consists of U.S. universities, national laboratories, and energy companies (see Table 3).

Table 3: CERC Advanced Coal Technology Consortium Current Members

U.S. Members	Chinese Members
West Virginia University (lead)	Huazhong University of Science and Technology (lead)
University of Wyoming	China Huaneng Group Clean Energy Research Institute
University of Kentucky	China University of Mining and Technology
Wyoming State Geological Survey	Harbin Institute of Technology
Indiana Geological Survey	Institute for Rock & Soil Mechanics, Chinese Academy of Science
Lawrence Livermore National Laboratory	Northwest University
Los Alamos National Laboratory	Research Center for Energy & Power, Chinese Academy of Sciences
National Energy Technology Laboratory	Shanghai JiaoTong University
U.S.-China Clean Energy Fund	Tsinghua University
World Resources Institute	Zhejiang University
American Electric Power	China Huaneng Group Power International, Inc.
Babcock and Wilcox *	China Power Engineering Consulting Group Corporation
Duke Energy, Inc.	China Power Investment Corporation

Table 3: CERC Advanced Coal Technology Consortium Current Members—Continued

U.S. Members	Chinese Members
General Electric (GE)	ENN
LP Amina	Shaanxi Yanchang Petroleum Group Co., Ltd.
	Shenhua Group

*Note: Participation ended June 30, 2014, with further participation subject to corporate review.³⁸

Source: U.S.-China Clean Energy Research Center. http://www.us-china-cerc.org/Advanced_Coal_Technology.html.

The ACTC was the first CERC consortium to launch joint demonstration projects, several of which expanded upon existing private sector partnerships that had been in the early stages of development as CERC was being established and were folded into the CERC portfolio.³⁹ For example, Huaneng and Duke Energy had begun cooperation related to advanced coal technology and CCS demonstration in 2009 as the CERC agreement was being negotiated.⁴⁰

In its most basic form, CCS is the process by which CO₂ emissions from power plants and other industrial facilities are captured and stored underground. CCS can be applied to electricity generating plants that burn fossil fuels, such as coal- or gas-fired power stations, and can also significantly reduce emissions from industry, such as the cement, steel, and chemical industries. Although the United States has championed CCS research in the 2000s,^{*} interest in coal emission mediation (and related funding) has been on the decline as a result of the influx of cheap natural gas derived from advancements in “fracking.”⁴¹ As greater attention and financing has focused on natural gas for its cheap generation cost and low emissions relative to alternatives, utilities are reducing their demand for coal, and are unwilling to pay a premium for CCS.⁴² China’s reliance on coal, however, will remain quite strong for the near future: Even if the Chinese government is successful in reducing the share of coal in the energy mix, as envisioned in the 12th Five-Year Plan, consumption of coal will rise in absolute terms, as total energy demand is set to grow 4.3 percent a year over the 2011–2015 period. In 2013 alone, China approved the construction of more than 100 million tons of new coal production capacity, six times more than a year earlier.⁴³ Therefore, involvement

*Several CCS demonstration projects are currently underway in the United States, most with DOE support. For some examples of DOE’s programs, see U.S. Department of Energy, “Carbon Capture and Storage Research.” <http://energy.gov/fel/science-innovation/carbon-capture-and-storage-research>. An electrical generating station currently under construction in Kemper County, Mississippi, when completed, will be the first U.S. power plant with integrated CCS technology (the plant is expected to go into operation in 2015). The project, however, has been behind schedule and over budget, leading to criticism of its viability and broader applicability to U.S. coal power plants. See Steven Mufson, “Intended Showcase of Clean-Coal Hits Snags,” *Washington Post*, May 17, 2014. [http://www.washingtonpost.com/business/economy/intended-showcase-of-clean-coal-future-hits-snags/2014/05/16/?hpid=hp-top-news-story%3Aenergy&hpid=hp-top-news-story%3Aenergy&hpid=hp-top-news-story%3Aenergy&hpid=hp-top-news-story%3Aenergy](http://www.washingtonpost.com/business/economy/intended-showcase-of-clean-coal-future-hits-snags/2014/05/16/?hpid=hp-top-news-story%3Aenergy&hpid=hp-top-news-story%3Aenergy&hpid=hp-top-news-story%3Aenergy&hpid=hp-top-news-story%3Aenergy&hpid=hp-top-news-story%3Aenergy). Another project partially funded by DOE, the Petra Nova Carbon Capture Project (under construction in Thompsons, Texas), will be the largest CCS coal power plant in the world. The project is expected to be completed in 2016. Uclia Wang, “NRG’s \$1B Bet To Show How Carbon Capture Could Be Feasible For Coal Power Plants,” *Forbes*, July 15, 2014. <http://www.forbes.com/sites/ucliaawang/2014/07/15/nrgs-1b-bet-to-show-how-carbon-capture-could-be-feasible-for-coal-power-plants/>.

in the ACTC presents a unique opportunity for U.S. companies specializing in CCS and related clean coal research.⁴⁴

The ACTC's current research agenda is divided into seven themes to match the research interests and efforts of both the United States and China. These can be loosely categorized into three general areas: CCS; power generation; and coal conversion.⁴⁵ Jerald Fletcher, founding director of the ACTC noted in his testimony before the Commission that although both countries are engaged in all aspects of the research, "it has been clear from the beginning that the [United States] perceived the carbon management issues to be of the highest interest while China was most interested in the increasing efficiency and technical advances in power generation and coal utilization."⁴⁶

This mismatch in research interests is reflected in IP creation. Although several of the ACTC's projects have led to IP creation, none of the IP is jointly held by Chinese and U.S. partners. As of January 2013, ACTC participants had filed 15 patents (12 filed in China by Chinese ACTC members, and three filed in the United States by U.S. members).⁴⁷

According to CERC's U.S. Director Robert Marlay, as of July 2014, the ACTC had 39 research projects, 30 of which are joint research activities; some of which are highlighted here.⁴⁸

- *Clean Coal Conversion Technology Project* involves joint research, led by WVU and Zhejiang University, into developing new technology to convert conventional power plants into power plants that use waste heat and fuel combustion to produce chemicals and further byproducts from coal, making the overall coal power production process more efficient, reducing emissions, and increasing economic benefits. To date, researchers have successfully validated the theoretical modeling on a 1-megawatt pilot plant. Upon completion of the project, the newly developed technology is expected to reduce maintenance costs and greenhouse gas emissions by more than 25 percent, compared to conventional energy. Future plans include ACTC participant LP Amina building a demonstration project at a power plant in Shanxi, China.⁴⁹
- *CO2 Utilization Project* involves research, by the University of Kentucky and Duke Energy on the U.S. side and ENN Group and Zhejiang University on the Chinese, into developing an economically feasible technology to use CO2 to make biofuels. In a demonstration facility installed at Duke Energy's East Bend power plant in Rabbit Hash, Kentucky, CERC researchers feed to algae the CO2 captured after combustion. Eventually, the algae, which absorb the CO2, as do all plants, can be harvested for biogas fuels and animal feed. The research involves finding the optimum methods for growing and harvesting the oil from the algae, picking the best varieties of algae, and selecting the best types of growing media, such as ponds or closed-loop photobioreactors.⁵⁰
- *Advanced Power Generation Project* is led by LP Amina on the U.S. side and Tsinghua University on the Chinese side. Researchers designed and constructed a unique experimental sys-

tem to research pulverized coal combustion and developed a toolbox of energy conservation and emission reduction technologies for coal-fired power plants. Researchers investigated combustion characteristics of Xinjiang Houxun coal in advanced ultra supercritical (A-USC) boilers. Power plants equipped with A-USC boilers have the potential to dramatically improve efficiency and reduce emissions compared to existing coal-fired power plants. The development of improved A-USC boiler technologies was adopted as a national program in China.⁵¹

- *Post-combustion CO₂ Capture Project* is focused on developing new technologies to capture and dissolve captured CO₂, which will be used to lower energy costs related to the post-combustion capture process. The research is led by University of Kentucky and China Huaneng Group. Researchers completed the simulation of a 1 million ton/year post-combustion CO₂ capture system at Duke Energy's Gibson station, which revealed advantages over other methods. A two-phase solvent and a new catalyst family with record activity levels were also developed for the project.⁵²
- *CO₂ Sequestration and Storage Project* resulted in the publication of 11 peer-reviewed papers and conference papers on the storage and use of CO₂ in the Ordos Basin in China. Led by West Virginia University, University of Wyoming, Los Alamos National Laboratory, Lawrence Livermore National Laboratory, Shenhua Group, and the Institute of Rock and Soil Mechanics (Chinese Academy of Sciences), the researchers initiated design, construction, and injection of CO₂ at a pilot project in China. They also assembled a large data set regarding the geologic structural framework of the Ordos Basin in China, as well as for the Wyoming and Illinois Basins in the United States. The significant opportunity for storage and use of CO₂ in the Ordos Basin complements opportunities that are being explored in the Wyoming and Illinois Basins.⁵³

Another U.S.-based ACTC participant, LP Amina, had begun cooperation with Gemeng International Energy Co. of Shanxi province, following a successful demonstration of an LP Amina technology process in China with the Zhejiang Energy Group. LP Amina's new technology, a coal classifier, prevented larger coal particles from entering the boiler, reducing nitrogen oxide emissions by up to approximately 15 percent, and reduced coal consumption and emissions. Despite the benefits, customers in the United States would not buy the new classifier because it was an unproven technology that demanded a substantial upfront investment.⁵⁴ After engagement in joint R&D and workshops convened by the CERC-ACTC, LP Amina partnered with Zhejiang Energy Group, which installed the converter at one of its power plants in Fengtai in the Anhui Province in eastern China. David Piejak, president of LP Amina in the United States, said that following the successful demonstration in China, LP Amina started marketing this technology to global companies, including plants in the United States.⁵⁵

CERC Cooperation Case Study: Clean Vehicles Consortium (CVC)

Huei Peng from the University of Michigan (Ann Arbor) leads the U.S. consortium, and Minggao Ouyang from Tsinghua University leads the Chinese consortium. Current CVC participants are listed in Table 4.

Table 4: CERC Clean Vehicles Consortium Current Members

U.S. Members	Chinese Members
University of Michigan (lead)	Tsinghua University (lead)
The Ohio State University	Beihang University
Massachusetts Institute of Technology (MIT)	Beijing Institute of Technology
Sandia National Laboratories	Chinese Academy of Sciences
Joint BioEnergy Institute	Hunan University
Oak Ridge National Laboratory	North China Electric Power University
Argonne National Laboratory	Shanghai Jiao Tong University
Aramco Services	Tianjin University
Delphi	Tongji University
Denso	Wuhan University of Technology
Eaton	Changzhou ECTEK Automotive Electronics Limited
Ford Motor Company	China Automotive Engineering Research Institute Co., Ltd.
Honda R&D Americas, Inc.	China Automotive Technology & Research Center
Huntsman International	China Potevio
PJM	Geely Group
TE Connectivity	JAC Motors
Toyota Motor Company, North America	Jing-jin Electric Co., Ltd.
	Keypower
	SAIC Motor.
	Shanghai General Motor Muling
	Tianjin Lishen Battery Joint-stock Co., Ltd.
	Wanxiang

Source: U.S.-China Clean Energy Research Center. http://www.us-china-cerc.org/Clean_Vehicles.html.

According to the testimony from Dr. Peng, the CVC's research projects officially started in 2011. Since then, joint research has been conducted in the following areas: advanced batteries and en-

ergy conversion, advanced biofuels and clean combustion, vehicle electrification, advanced lightweight materials and structures, vehicle-grid integration, and energy systems analysis. The CVC has been one of the most active consortia in terms of inventions. According to CERC U.S. Director Robert Marlay, as of July 2014, the CVC had 24 research activities, of which 16 were joint, some of which are highlighted here.⁵⁶

- *Degradation in Li-ion Batteries* is a project led by the Ohio State University, Tsinghua University, and Beijing Institute of Technology. The researchers explored ways to extend life and improve performance of lithium-ion (Li-ion) batteries, commonly used in hybrid and electric vehicles. The CVC researchers demonstrated a new design that minimizes this degradation in performance by applying a special polymer coating. The final outcome of this research is expected to be a development of a new battery cell for further studies.⁵⁷
- *Research into Materials Sourcing and Driving Behavior* is led by University of Michigan and Tsinghua University, in partnership with General Motors and Ford. CERC researchers used GPS tracking software on 1,000 vehicles to reveal that 60 percent of Beijing drivers travel fewer than 25 miles per day. By contrast, U.S. drivers log an average of 40 miles daily, which guided U.S. design criteria for battery-sizing of the Chevrolet Volt. Based on this new information, General Motors could downsize the Volt's battery in the Beijing market and still provide a level of service similar to that provided in the United States. Researchers simulated a Plug-in Hybrid Electric Vehicle similar to the Chevrolet Volt and examined the impact of vehicle component materials on lifecycle energy and emissions.⁵⁸
- *Vehicle Body Design Optimization*, a project led by University of Michigan, Tsinghua University, and Tongji University, explores a methodology for using lightweight materials in vehicle design. Further research is expected to explore the safety of newly designed vehicles, the effects of battery layouts on crash-worthiness, and optimization of the vehicle's aerodynamic performance.⁵⁹
- *Electric Vehicle Charging Station Simulations* conducted by researchers at the Ohio State University and Tsinghua University was aimed at improving coordination between road networks and electricity systems. Researchers found that current strategies for determining the location of vehicle charging stations will result in significant inefficiencies, and proposed alternative solutions.⁶⁰

As of January 2013, participants in the CERC CVC had filed 12 patents in China and 11 in the United States, as well as 20 disclosures* in the United States. Although all of the patents filed in China were filed by Chinese participants, the 11 patents filed in the United States were also filed by Chinese participants. These fil-

*An invention disclosure is a document describing the invention, prepared by the scientist, investor, or a third party, which usually serves as a first step in the patenting process.

ings were related to patents that had first been filed in China. In contrast, U.S. participants filed no patents in China.⁶¹ Furthermore, none of the patents were filed jointly by U.S. and Chinese CERC participants. The lack of jointly-created IP and of U.S. inventions patented in China—features shared by all CERC consortia—point to the continued sensitivity over the capacity of Chinese law to protect IP and address violations.

The automotive industry is highly competitive and, although foreign brands or joint ventures have dominated the Chinese automotive market to date, Beijing is heavily invested in making China a world leader in the production and deployment of electric and hybrid vehicles.* This poses a significant competitive challenge to U.S. industrial partners in CERC—how to advance their own presence in China while maintaining an edge over Chinese competitors. According to Dr. Peng, the funding model for U.S. CERC ensures that all work supported by U.S. industrial membership fees is U.S.-only and does not have Chinese collaborators.⁶²

Unlike the CERC ACTC, where several industry partners joined to seek help with demonstrating a ready technology, the work done by CERC CVC participants is in the early stages of research, with commercialization years away.⁶³ Still, Dr. Peng noted in a 2013 CERC CVC progress report that U.S. industrial partners have requested a review of the implementation for all U.S. based tasks, with the goal of setting clear pathways towards commercialization.⁶⁴

U.S.-China Cooperation on Natural Gas

Although natural gas accounted for only 4 percent of China's energy consumption in 2011 (the most recent data available), the government has invested heavily in resource development and infrastructure. The 12th Five-Year Plan set a target to boost the share of natural gas to 8 percent of total consumption by the end of 2015 and to 10 percent by 2020. According to a 2014 report by the U.S. Energy Information Administration, China's technically recoverable shale gas reserves are 1,115 trillion cubic feet, the largest shale gas reserves in the world.⁶⁵

The government agenda for natural gas in China is ambitious, but it faces significant obstacles. China lacks technical experience and adequate infrastructure which, coupled with the difficult geology of Chinese reserves, makes recovery challenging. The Chinese shale gas revolution cannot progress without U.S. cooperation.⁶⁶

The United States and China are working together in both a governmental and private sector capacity. In 2009, Presidents Barack Obama and Hu Jintao announced the launch of the U.S.-China Shale Gas Resource Initiative with the goal of sharing information about shale gas exploration and technology to reduce greenhouse gas emissions, promote energy security, and create commercial op-

*The government established targets for pure electric and hybrid electric vehicles of 500,000 by 2015 and 5 million by 2020. Its "ten cities, thousand vehicles" program, launched the same, planned for ten cities to develop 1,000 electric vehicles each; by 2011, the list of cities had expanded to 25. Subsidies of 50,000–60,000 RMB (\$8,000–\$9,600) were offered to consumers who purchased the cars. Elizabeth Economy, "China's Round Two on Electric Cars: Will It Work?" *Asia Unbound* (Council on Foreign Relations), April 17, 2014. <http://blogs.cfr.org/asia/2014/04/17/chinas-round-two-on-electric-cars-will-it-work-2/>.

portunities. The U.S.-China Shale Gas Resource Initiative promotes information sharing and joint studies to provide U.S. commercial opportunities and increase the pace of development of shale gas in China.⁶⁷ Tours, workshops, and the U.S.-China Oil and Gas Industry Forum are functions of the Initiative used to increase investment in China's shale market. The U.S.-China Oil and Gas Industry Forum sponsors an annual meeting designed to bring industry players together to share information via technical presentations.⁶⁸ In September 2012, the forum sponsored a meeting focused on shale gas. DOE also has relevant work underway that focuses on issues under Annex III of the bilateral Fossil Energy Protocol.⁶⁹

Other examples of government-to-government collaboration include the U.S. Geological Survey and DOE's work with Chinese counterparts to develop estimates for China's shale gas resources.⁷⁰ USTDA has also contributed by partnering with China's NEA on a training program that included four short courses led by the Gas Technologies Institute and targeted attendees from the Chinese government and industry.⁷¹

These government-led activities notwithstanding, commercial activities have been the main avenue for information sharing and technology transfer in the shale gas sector. The U.S. technological edge makes U.S. companies valuable sources of fracking know-how for Chinese oil companies, and Chinese investment in the U.S. shale gas sector has been on the rise. Rhodium Group, a consultancy, shows that from 2000 to the first quarter of 2014, Chinese investors made over 100 deals, both greenfield and acquisition, in the U.S. energy sector, valued at nearly \$12 billion.⁷² In 2013 alone, China invested \$3.2 billion in the U.S. energy sector. Sinopec invested \$1 billion in Chesapeake Energy's oil and gas assets in Oklahoma; Sinochem bought the Wolfcamp shale field for \$1.7 billion from Pioneer Natural Resources, and CNOOC acquired Nexen's U.S. operations in the Gulf of Mexico.⁷³

The success of Chinese investors in the United States points to a troubling lack of reciprocity. As Sarah Forbes, senior associate at World Resources Institute, has pointed out, China prohibits foreign companies from fully entering this sector on their own, forcing them instead to form partnerships with Chinese entities.⁷⁴ Chinese companies face no such obstacles when they acquire assets in U.S. gas and oil companies working on shale projects. While Chinese capital helps U.S. companies to pursue the domestic energy projects driving the United States' move toward energy independence, they raise concerns about the long-term effects of technology transfer on U.S. economic competitiveness.

U.S.-China Cooperation on Civil Nuclear Energy

As a reliable non-fossil energy source, nuclear power plays a central role in China's plan to reduce its reliance on coal.⁷⁵ Although nuclear sources accounted for only 1 percent of China's total energy consumption in 2011 (the most recent data available), Chinese nuclear expansion plans are by far the most ambitious in the world. While China has 20 reactors online (accounting for about 2 percent of total generation capacity),⁷⁶ it has 28 reactors under construc-

tion (representing roughly 40 percent of reactor construction around the world),⁷⁷ and an additional 58 reactors are being planned.⁷⁸ China's installed nuclear capacity was 14.7 GW in 2013; the 12th Five-Year plan set a goal of 40 GW by the end of 2015 and 58 GW by 2020. In contrast, the United States has 62 commercial nuclear power plants with 100 nuclear reactors (with combined capacity of 101 GW) generating 19 percent of the country's electricity, behind coal and natural gas.

The Chinese government's plans for nuclear energy development emphasize self-reliance. Technology development, however, presents a major challenge for the Chinese nuclear sector, where a select number of state-owned nuclear companies have long struggled to develop advanced reactor technology based on older reactor imports.⁷⁹ As it has done in other industrial sectors, the government started obtaining foreign technology to rectify gaps in indigenous capability.

The United States and China have cooperated on nuclear energy for nearly 30 years, although for most of its history, the cooperation has focused primarily on strengthening safety. Under the U.S.-China Peaceful Uses of Nuclear Technology Agreement of 1998, DOE has provided nuclear safety, safeguards, and security training to Chinese regulators and technicians to ensure China meets the highest nuclear safety and nonproliferation standards. DOE's National Nuclear Security Administration has been collaborating with Chinese authorities on radioactive source security, nuclear safeguards, export controls, materials and waste management, emergency management, and the establishment of a center of excellence for nuclear security training.

The United States and China also participate in cooperative research in nuclear energy technology under the auspices of the U.S.-China Bilateral Civil Nuclear Energy Cooperative Action Plan, signed in 2007. Designed to "explore advanced nuclear fuel cycle approaches in a safe, secure and proliferation-resistant manner," the two countries cooperate in the areas of advanced fuel cycle technology, fast reactor technology, and small and medium reactors.⁸⁰

As with shale gas development, however, transfer of technology through commercial engagement dominates U.S.-China nuclear cooperation. In 2007, U.S.-based Westinghouse (owned by Toshiba Corp.) won the contract to build four AP1000 nuclear reactors in China. The deal included a technology transfer agreement that allowed China's State Nuclear Power Technology Corp., directly under China's State Council, to receive over 75,000 documents that relate to the construction of the AP1000 reactors.⁸¹ The first reactor built under this arrangement was expected to go on line in 2013, but construction delays and tougher safety checks pushed the start back several times—first to December 2014 and later to the end of 2015.⁸²

According to Jane Nakano, Energy and National Security Program fellow at CSIS, the construction of AP1000 reactors has been providing U.S. regulators and engineers with valuable first-hand observations that contribute to the overall improvement of work on nuclear safety.⁸³ China decided to begin construction on the AP1000 reactors before they were approved by the U.S. Nuclear

Regulatory Commission, essentially becoming a “pilot” for U.S.-designed reactors.

China has drawn technology from foreign partners (notably Russia and France) prior to the Westinghouse deal. In fact, the most common reactor type currently under construction is the CPR-1000, a Chinese development of French design. The intellectual property rights were retained by the French company Areva, however, which limited the overseas sales potential for the CPR-1000.⁸⁴ Because the sale of the AP1000 entailed a substantial IP transfer, it created a situation where Westinghouse bolstered the competitiveness of Chinese vendors. As Ms. Nakano notes in her testimony, the Chinese government has dedicated significant resources to “indigenize” most advanced nuclear technology, making development of a Chinese reactor based on the AP1000 one of the 16 “national projects” under China’s Medium- and Long-Term National Science and Technology Development Plan (covering 2006–2020).⁸⁵ According to various statements from Chinese nuclear regulators and operators, the intellectual property rights on “indigenous” reactor, CAP1400, reside with the Chinese entities, referring to their agreement with Westinghouse that reportedly “gave the Chinese domestic rights to much of the core AP1000 derivatives.”⁸⁶

As a consequence of using, adapting, and improving foreign technology, China is now self-sufficient in reactor design and construction, and is pursuing a policy of exporting nuclear technology.⁸⁷ China National Nuclear Corporation (CNNC) and China General Nuclear Power Group (CGN), China’s main nuclear operators, are working to find an international market for their reactors, mostly developed based on the CAP1400 reactor. In 2013, CNNC was contracted to build two reactors for a nuclear power project in Pakistan,* with the Chinese government committing to finance \$6.5 billion of the \$9.95 billion for the project.⁸⁸

United States and China also collaborate on the next generation of nuclear technologies. Under an MOU on Cooperation in Nuclear Energy Sciences and Technologies, which includes cooperation on nuclear fuel resources and nuclear hybrid energy systems,⁸⁹ DOE and the Chinese Academy of Sciences (CAS) are collaborating on a molten salt reactor† that could run on thorium. Thorium, a naturally-occurring radioactive metal, is an alternative to uranium, and is abundant in nature.⁹⁰

The first thorium reactor was designed and built at DOE’s Oak Ridge National Laboratory in the 1960s (the program was ultimately cancelled due to a preference for uranium-fueled reactors). The Chinese government made research into thorium-based reactors a priority and budgeted \$350 million to a project at the Shanghai Institute of Applied Physics, with the intention to “obtain full intellectual property rights on the technology.”⁹¹ The Chinese pro-

* Although the Nuclear Suppliers Group (NSG), of which China is a member, forbids the supply of nuclear power plants to non-members like Pakistan without approval, China has argued that its agreement with Pakistan for cooperation in civil nuclear technology was signed before China joined the NSG. NSG has not censured China for the deal. See Saurav Jha, “With Reactor Deal, China and Pakistan Seek to Reshape Global Nuclear Governance,” *World Politics Review*, November 5, 2013. <http://www.worldpoliticsreview.com/articles/13349/with-reactor-deal-china-and-pakistan-seek-to-reshape-global-nuclear-governance>.

† Unlike the pressurized water cooling system most often used in traditional uranium-fueled reactors, molten salt reactors are an experimental class of nuclear fission reactors in which the primary coolant is a molten salt mixture, which reduces the risk of meltdowns.

gram is headed by Jiang Mianheng, son of the former Chinese president Jiang Zemin, who in 2010 brokered a cooperative agreement between DOE (primarily Oak Ridge National Laboratory) and CAS.⁹² In 2011, DOE gave a \$7.5 million grant for related research led by MIT in collaboration with the University of California at Berkeley and the University of Wisconsin at Madison. Westinghouse has been tapped as a commercial partner,⁹³ but no U.S. government program currently exists to develop thorium reactors.

Implications for the United States

To the extent that China's investment in clean energy leads to reduced emissions of CO₂ and other pollutants of water, air, and soil, U.S. public and private cooperation with China on development of clean energy has positive outcomes for all nations. China is a global leader in clean energy investment, and Chinese funding could be used to boost technologies that are not cost effective in the short run. Moreover, the combined work of U.S. and Chinese researchers can magnify progress made individually. Intangible benefits, such as building trust and mutual understanding, are also valuable and will likely lead to future collaboration.

China's lack of strong IP standards and potential for future competition with U.S. renewable energy companies remain primary challenges to closer cooperation. Analysts and policymakers continue to fear that China could reap the benefits of cooperation at the expense of U.S. industry and workers.⁹⁴ Although much of the current friction has been concentrated in the renewable energy sector, the Chinese government has deployed massive resources to promote the clean energy sector as well, which may result in additional anticompetitive or illegal practices. In 2012, the U.S. Department of Commerce applied antidumping and countervailing duties on Chinese solar panels after U.S. solar companies successfully argued that Chinese manufacturers were unfairly subsidized by the Chinese government.⁹⁵ In a separate case, American Superconductor Corp. (AMSC) sued Sinovel, a Chinese wind turbine manufacturer, through the Chinese courts for up to \$1.2 billion of damages for theft of IP.⁹⁶ The U.S. Department of Justice charged Sinovel (along with two of its employees and a former employee of an AMSC subsidiary) with stealing trade secrets from AMSC, causing an alleged loss of more than \$800 million to the company. The case is still pending.⁹⁷

CERC's efforts are still too new to comprehensively assess. Under CERC, the policy dialogue, capacity building, and technology transfer are supplemented with joint R&D and new technologies. The Technology Management Plan set up by CERC is one example of an attempt to alleviate concerns over protection of IP. However, to date, most CERC participants still tend to design collaborative projects only around less sensitive research topics and little of the new IP generated through CERC activities has come from collaborative efforts—an indication that China's history of poor IP protection continues to have a chilling effect on cooperation.

Dr. Lewis noted that many of the truly collaborative and international projects under CERC do not deal in true R&D activities, but rather less sensitive research areas, such as technology mod-

eling and policy analysis.⁹⁸ Experts working on other collaborative efforts have reached the same conclusion. For example, Valerie Karplus, project director of the China Energy and Climate Project at MIT, echoed Dr. Lewis's assessment. The China Energy and Climate Project collaborative team studies energy and environmental policy decision making in China, in most cases employing open-source modeling tools, which eliminates common IP- or competition-related concerns associated with U.S.-China cooperation on clean energy.⁹⁹ Focusing on building trust might be a good option in the short term, but work needs to be truly collaborative in the long run to ensure that benefits accrue equally to all participants.

For U.S. energy companies, lack of consistent U.S. government policy and secure funding for new technologies means that they have to seek research or implementation opportunities elsewhere. According to Dr. Lewis, for almost all of the U.S. business participants in CERC "one of the biggest advantages of participating ... was to gain leverage for technology demonstration projects."¹⁰⁰ Many industry CERC participants have invested their own money in the collaborations "far in excess of government support because government involvement provided leverage for project approvals, and many CERC collaborations were perceived to have current or future commercial value."¹⁰¹

Despite some positive trends, all too often, U.S.-China collaboration continues to default to the transfer of U.S. technology to China. Collaboration on shale gas and nuclear power exemplify this trend. Investment by Chinese companies in U.S. shale points to the unequal access U.S. energy companies have in China, even as their Chinese counterparts do not have similar restrictions in the United States. In civil nuclear energy, too, the collaboration seems to have consisted solely of a transfer of U.S. intellectual property to China, which is now building its own reactors.

So many collaborative initiatives with overlapping priorities exist in the government-sponsored arena alone (see Addendum I) that it becomes difficult to track spending, mark progress, and identify redundancies. When various academic and industry initiatives (many receiving public money) are added to the mix, the task of separating successful and useful initiatives from the wasteful ones becomes even more challenging.

Another challenge to productive collaboration is getting participants to move from discussion to action. In her assessment of U.S.-China cooperation on clean coal and CCS, Kelly Sims Gallagher, director of the Center for International Environment and Resource Policy at Tufts University, said that although bilateral work on technical research continues to become more robust, "the problem remains of too many meetings and not enough concrete projects."¹⁰² Still, CERC is only halfway through its first five years, and will likely be renewed for a second five-year phase (2016–2020).

Conclusions

- The United States and China share similar challenges in their quest for clean energy. Both countries are leading global emitters

of greenhouse gasses and could benefit from cooperation on issues related to climate change and environmental protection.

- The United States and China have been cooperating for over 30 years on environmental and clean energy initiatives, with much of the early agreements focusing more on establishing the basic frameworks for cooperation and on energy policy discussions. In the 2000s, clean energy and climate change mitigation emerged as leading topics of cooperation between China and the United States, culminating in 2009 with the establishment of the Clean Energy Research Center (CERC), a joint research initiative.
- The CERC facilitates joint research and development on clean energy technology by teams of scientists and engineers from the United States and China. Funded in equal parts by the United States and China, CERC has participation from universities, research institutions and industry. CERC's three research priorities (the consortia) are advanced clean coal technologies, clean vehicles, and building energy efficiency.
- While Chinese CERC participants have been filing patents in China and in the United States, to date, there have been no jointly-created intellectual property (IP) and no U.S. inventions patented in China, suggesting that China's history of lax protection of IP dampens enthusiasm for collaboration.
- While collaboration under CERC is research-driven, U.S.-China cooperation on shale gas development is more commercial, largely involving investment by Chinese companies in U.S. shale assets in order to acquire technology and know-how.
- Similar to shale gas, U.S.-China cooperation on civil nuclear energy involves a sale of technology to China, supplemented by nuclear safety, safeguards, and security training to Chinese regulators and technicians to ensure China meets the highest nuclear safety and nonproliferation standards.

**Addendum I: U.S.-China Cooperation on Clean Energy
and Climate Change, 1979–2014**

Year	Initiative	Participants	Purpose/Description
1979	Scientific and Technology Cooperative Agreement	Official bilateral governmental agreement established by President Carter and Vice Premier Deng Xiaoping	Began with a focus on high-energy physics and then served as an umbrella for 30 subsequent bilateral environment and energy protocols. Extended for 5 years.
1979	MOU for Bilateral Energy Agreements	U.S. DOE and the China State Development Planning Commission (SDPC)	Led to 19 cooperative agreements on energy, including fossil energy, climate change, fusion energy, energy efficiency, renewable energy, peaceful nuclear technologies, and energy information exchange.
1979	Atmosphere and Science and Technology Protocol	NOAA and Chinese Meteorological Administration	Promotes bilateral exchange on climate and oceans data, research, and joint projects.
1983	Protocol on Nuclear Physics and Magnetic Fusion	DOE and State Science and Technology Commission (SSTC)	Pursues the long-term objective to use fusion as an energy source.
1987	Annex III to the Fossil Energy Protocol Cooperation in the Field of Atmospheric Trade Gases	DOE and State Science and Technology Commission (SSTC)	Cooperative research program on the possible effects of CO ₂ on climate change.
1988	Sino-American Conference on energy demand, markets and policy in Nanjing	Lawrence Berkeley National Laboratory (LBNL)/ DOE and State Planning Commission (SPC)/ Energy Research Institute (ERI)	Informal bilateral conference on energy efficiency that led to an exchange program between ERI and LBNL, and the first assessment of China's energy conservation published by LBNL in 1989.
1992	U.S. Joint Commission on Commerce and Trade	U.S. Department of Commerce (DOC)	Facilitates the development of commercial relations and related economic matters between the U.S. and China. The JCCT's Environment subgroup supports technology demonstrations, training workshops, trade missions, exhibitions and conferences to foster environmental and commercial cooperation.

**Addendum I: U.S.-China Cooperation on Clean Energy
and Climate Change, 1979-2014—Continued**

Year	Initiative	Participants	Purpose/Description
1993	U.S. Commercial Mission to China	DOE and DOC	For U.S. companies to promote their electric power technology services in China. Industry representatives identified a potential for \$13.5 billion in U.S. electric power exports between 1994–2003 (not including nuclear power), equating to 270,000 high-salary U.S. jobs and an opportunity for introducing cost-effective, environmental sound U.S. technologies into China's electric power industry.
1993	Establishment of the Beijing Energy Efficiency Center (BECon)	ERI, LBNL, Pacific Northwest National Laboratory (PNNL), WWF, EPA, SPC, SETC, SSTC	The first nongovernmental, non-profit organization in China focusing on promoting energy efficiency by providing advice to central and local government agencies, supporting energy efficiency business development, creating and coordinating technical training programs, and providing information to energy professionals.
1994	Annexes to the fossil energy protocol	DOE and SSTC	(1) To make positive contributions towards improving process and equipment efficiency, reduce atmospheric pollution on a global scale, advance China's Clean Coal Technologies Development Program, and promote economic and trade cooperation beneficial to both parties. (2) Cooperation in coal-fired magnetohydrodynamic (MHD) power generation.
1994	China's Agenda 21 Document Released	SSTC and China's National Climate Committee	Lays out China's request for international assistance on environmental issues. The U.S. agreed to support China through DOE's Climate Change Country Studies and Support for National Actions Plans programs.

**Addendum I: U.S.-China Cooperation on Clean Energy
and Climate Change, 1979–2014—Continued**

Year	Initiative	Participants	Purpose/Description
1995	Series of DOE bilateral agreements signed by Secretary of Energy Hazel O'Leary	<i>Bilateral agreements on energy between DOE and ministries as noted below:</i> (1) MOU on bilateral energy consultations (with SPC) (2) Research on reactor fuel (with China Atomic Energy Authority) (3) Renewable energy (with Ministry of Agriculture) (4) Energy efficiency development (with SSTC) (5) Renewable energy technology development (with SSTC) (6) Coal bed methane recovery and use (with Ministry of the Coal Industry) (7) Regional climate research (with the China Meteorological Administration) <i>Also established</i> • Plan for mapping China's renewable energy resources (with SPC) • Strategies for facilitating financing of U.S. renewable energy projects in China (with SPC, Chinese and U.S. Ex-Im Banks) • Discussions for reducing and phasing out lead gasoline in China (DOE & EPA with China's EPA & SINOPEC)	
1995 (some annexes in 1996)	Protocol for Cooperation in the Fields of Energy Efficiency and Renewable Energy Technology Development and Utilization	DOE and various ministries	This Protocol has seven annexes that address policy; rural energy (Ministry of Agriculture); large-scale wind systems (with SEPA); renewable energy business development (with SETC) and geothermal energy; energy efficiency (with SPC); and hybrid-electric vehicle development. Ten teams of Chinese and U.S. government and industry representatives work under this protocol focusing on: energy policy, information exchange and business outreach, district heating, cogeneration, buildings, motor systems, industrial process controls, lighting, amorphous core transformers, and finance.
1995–2000	Statement of Intent for Statistical information exchange (later became a Protocol)	DOE and China's National	Consisted of five meetings to discuss energy supply and demand and exchange information on methods of data collection and processing of energy information.

**Addendum I: U.S.-China Cooperation on Clean Energy
and Climate Change, 1979-2014—Continued**

Year	Initiative	Participants	Purpose/Description
1997	U.S.-China Forum on Environment & Development	Established by Vice President Al Gore and Premier Li Peng	Venue for high-level bilateral discussion on sustainable development. Established four working groups: energy policy, commercial cooperation, science for sustainable development, and environmental policy. Three priority areas for cooperative work: urban air quality; rural electrification; and clean energy and energy efficiency.
1998-on-going	Agreement of Intent on Cooperation Concerning Peaceful Uses of Nuclear Technology	DOE and SPC	Paved the way for the exchange of information and personnel, training and participation in research and development in the field of nuclear and nuclear non-proliferation technologies.
1997	Energy and Environment Cooperation Initiative (EECI)	DOE and SPC	Targeted urban air quality, rural electrification and energy sources, and clean energy sources and energy efficiency. Involved multiple agencies and participants from business sectors, and linked energy development and environmental protection.
1997	U.S.-China Energy and Environmental Center	Tsinghua University and Tulane University, with DOE and SSTC/MOST	An initiative centered at Tsinghua and Tulane Universities co-funded by DOE and MOST to: (1) provide training programs in environmental policies, legislation and technology; (2) develop markets for U.S. clean coal technologies; and (3) help minimize the local, regional and global environmental impact of China's energy consumption.
1998	Joint Statement on Military Environmental Protection	U.S. Secretary of Defense and Vice-Chairman of Chinese Central Military Commission	MOU provides for the exchange of visits by high-level defense officials and the opening of a dialogue on how to address common environmental problems.

**Addendum I: U.S.-China Cooperation on Clean Energy
and Climate Change, 1979-2014—Continued**

Year	Initiative	Participants	Purpose/Description
1999	U.S.-China Forum on Environment & Development	The U.S. Ex-Im Bank, DOE, the China Development Bank, and the SDPC	The second meeting of the Forum in Washington, co-chaired by Vice President Al Gore and Premier Zhu Rongji. Two key agreements that came out of the meeting related to renewable energy included a MOU for the establishment of a \$100 Million Clean Energy Program to accelerate the deployment of clean U.S. technologies to China in the area of energy efficiency, renewable energy, and pollution reduction, and a Statement of Intent on Cleaner Air and Cleaner Energy Technology Cooperation that focused on energy efficiency improvements in industrial coal-fired boilers; clean coal technology; high-efficiency electric motors; and grid-connected wind electric power.
1999–2000	Fusion Program of Cooperation	DOE and CAS	Plasma physics, fusion technology, advanced design studies and materials research.
2002–2003	U.S.-China Fusion Bilateral Program	DOE and CAS	Plasma physics, fusion technology and power plant studies.
2003	FutureGEN	DOE with many international partners	Initially planned as a demonstration project for an Integrated Gasification Combined Cycle (IGCC) Coal plant with carbon capture and storage (CCS), the project was significantly restructured in January 2008 and now may provide federal funding to support CCS on a privately funded IGCC or PC plant, though the timeframe is highly uncertain.
2004	U.S.-China Energy Policy Dialogue	DOE and NDRC	Resumed the former Energy Policy Consultations under the 1995 DOE-SPC MOU. Led to a MOU between DOE and NDRC on Industrial Energy Efficiency Cooperation and includes energy audits of up to 12 of China's most energy-intensive enterprises, as well as training and site visits in the U.S. to train auditors.
2004	U.S.-China Green Olympic Cooperation Working Group	DOE, Beijing Government	Included opportunities for DOE to assist China with physical protection of nuclear and radiological materials and facilities for the Beijing Olympics as done in Athens, Greece.

**Addendum I: U.S.-China Cooperation on Clean Energy
and Climate Change, 1979-2014—Continued**

Year	Initiative	Participants	Purpose/Description
2006	Asia-Pacific Partnership on Clean	U.S., China + India, Japan, Korea, Australia (later Canada)	Created public-private task forces around specific sectors: Aluminum, Buildings and Appliances, Cement, Cleaner Use of Fossil Energy, Coal Mining, Power Generation and Transmission, Renewable Energy and Distributed Generation, and Steel.
2006	U.S.-China Strategic Economic Dialogue (SED)	U.S. Treasury Secretary Henry Paulson and Vice Premier Wu Yi. Includes DOE, EPA, NDRC, MOST	Bi-annual, cabinet level dialogue that includes an energy and environment track.
2007	MOU on Cooperation on the Development of Biofuels	USDA and NDRC	Encourages cooperation in biomass and feedstock production and sustainability; conversion technology and engineering; bio-based product development and utilization standards; and rural and agricultural development strategies.
2007	U.S.-China Bilateral Civil Nuclear Energy Cooperative Action Plan	DOE and NDRC	To compliment discussions under the Global Nuclear Energy Partnership (GNPE) towards the expansion of peaceful, proliferation-resistant nuclear energy for greenhouse gas emissions-free, sustainable electricity production. Bilateral discussions include separations technology, fuels and materials development, fast reactor technology and safeguards planning.
2007	U.S.-China Westinghouse Nuclear Reactor Agreement	DOE, State Nuclear Power Technology Corporation (SNPTC)	DOE approved the sale of four 1,100-megawatt AP1000 nuclear power plants which use a recently improved version of existing Westinghouse pressurized water reactor technology. The contract was valued at \$8 billion and included technology transfer to China. The four reactors are to be built between 2009 and 2015.

**Addendum I: U.S.-China Cooperation on Clean Energy
and Climate Change, 1979-2014—Continued**

Year	Initiative	Participants	Purpose/Description
2008	Ten Year Energy & Environment Cooperation Framework (SED IV)	DOE, Treasury, State, Commerce, EPA, NDRC, State Forestry Administration, National Energy Administration (NEA), Ministry of Finance, Ministry of Environmental Protection (MEP), MOST, and MFA	Establishes five joint task forces on the five functional areas of the framework: (1) clean efficiency and secure electricity production and transmission; (2) clean water; (3) clean air; (4) clean and efficient transportation; and (5) conservation of forest and wetland ecosystems.
2009	U.S.-China Strategic & Economic Dialogue	U.S. Department of State and Department of Treasury, China Ministry of Foreign Affairs	In April 2009 the SED was re-branded as the Strategic and Economic Dialogue (S&ED), with the State and Treasury Departments now co-chairing the dialogue for the United States. Treasury Secretary Timothy F. Geithner and Secretary of State Hillary Rodham Clinton were joined for the first Dialogue in July 2009 by their respective Chinese Co-Chairs, State Councilor Dai Bingguo and Vice Premier Wang Qishan, to cover a range of strategic and economic issues. The S&ED was convened again in Beijing in May 2010.
2009	Memorandum of Understanding to Enhance Cooperation on Climate Change, Energy and the Environment This MOU is to be implemented via the existing Ten-Year Energy and Environment Cooperation Framework, and a newly established Climate Change Policy Dialogue, as well as new agreements forthcoming.	Signed between DOE, State and NDRC. To strengthen and coordinate respective efforts to combat global climate change, promote clean and efficient energy, protect the environment and natural resources, and support environmentally sustainable and low-carbon economic growth. Both countries resolve to pursue areas of cooperation where joint expertise, resources, research capacity and combined market size can accelerate progress towards mutual goals. These include, but are not limited to: <ul style="list-style-type: none"> • Energy conservation and energy efficiency • Renewable energy • Cleaner uses of coal, and carbon capture and storage • Sustainable transportation, including electric vehicles • Modernization of the electrical grid • Joint research and development of clean energy technologies • Clean air • Clean water • Natural resource conservation, e.g., protection of wetlands and nature reserves • Combating climate change and promoting low-carbon economic growth 	

**Addendum I: U.S.-China Cooperation on Clean Energy
and Climate Change, 1979-2014—Continued**

Year	Initiative	Participants	Purpose/Description
2009	Climate Change Policy Dialogue	Representatives of the two countries' leaders	The United States and China will work together to further promote the full, effective and sustained implementation of the United Nations Framework Convention on Climate Change. The dialogue will promote: (1) discussion and exchange of views on domestic strategies and policies for addressing climate change; (2) practical solutions for promoting the transition to low-carbon economies; (3) successful international negotiations on climate change; (4) joint research, development, deployment, and transfer, as mutually agreed, of climate-friendly technologies; (5) cooperation on specific projects; (6) adaptation to climate change; (7) capacity building and the raising of public awareness; and (8) pragmatic cooperation on climate change between cities, universities, provinces and states of the two countries.
2009	Memorandum of Cooperation to Build Capacity to Address Climate Change	EPA and NDRC	In support of the MOU to Enhance Cooperation on Climate Change, Energy and the Environment, this five-year agreement includes: (1) capacity building for developing greenhouse gas inventories; (2) education and public awareness of climate change; (3) the impacts of climate change to economic development, human health and ecological system, as well as research on corresponding countermeasures; and (4) other areas as determined by the participants.
2009	U.S.-China Joint Commission on Commerce and Trade	Co-chaired by U.S. Dept. of Commerce Secretary Gary Locke, U.S. Trade Representative Ron Kirk, Chinese Vice Premier Wang Qishan, with participation from many ministries/agencies from both countries	The Commission met in October 2009 in Hangzhou, China, and reached multiple agreements in many sectors, including, in the clean energy sector for China to remove its local content requirements on wind turbines.

**Addendum I: U.S.-China Cooperation on Clean Energy
and Climate Change, 1979-2014—Continued**

Year	Initiative	Participants	Purpose/Description
2009	U.S.-China Clean Energy Research Center (CERC)	DOE, MOST, NEA	First announced in July 2009 during U.S. Department of Energy Secretary Steven Chu's visit to Beijing and finalized during the November 2009 Presidential Summit, the Center will facilitate joint research and development of clean energy technologies by teams of scientists and engineers from the United States and China, as well as serve as a clearinghouse to help researchers in each country. The Center will be supported by public and private funding of at least \$150 million over five years, split evenly between the two countries. Initial research priorities will be building energy efficiency, clean coal including carbon capture and storage, and clean vehicles.
2009	U.S.-China Electric Vehicles Initiative	DOE, MOST, NEA	Announced during the November 2009 Presidential Summit and building on the first-ever U.S.-China Electric Vehicle Forum in September 2009, the initiative will include joint standards development, demonstration projects in more than a dozen cities, technical roadmapping, and public education projects.
2009	U.S.-China Renewable Energy Partnership	DOE, MOST, NEA	Announced during the November 2009 Presidential Summit, the Partnership calls for the two countries to develop roadmaps for widespread renewable energy deployment in both countries. The Partnership will also provide technical and analytical resources to states and regions in both countries to support renewable energy deployment and will facilitate state-to-state and region-to-region partnerships to share experience and best practices. A new Advanced Grid Working Group will bring together U.S. and Chinese policymakers, regulators, industry leaders, and civil society to develop strategies for grid modernization in both countries. A new U.S.-China Renewable Energy Forum will be held annually, rotating between the two countries. The first was held in China late May 2010.

**Addendum I: U.S.-China Cooperation on Clean Energy
and Climate Change, 1979-2014—Continued**

Year	Initiative	Participants	Purpose/Description
2009	21st Century Coal	DOE, MOST, NEA	Announced during the November 2009 Presidential Summit, the two Presidents pledged to promote cooperation on cleaner uses of coal, including large-scale carbon capture and storage (CCS) demonstration projects. Through the new U.S.-China Clean Energy Research Center, the two countries are launching a program of technical cooperation to bring teams of U.S. and Chinese scientists and engineers together in developing clean coal and CCS technologies. The two governments are also actively engaging industry, academia, and civil society in advancing clean coal and CCS solutions.
2009	Shale Gas Resource Initiative	DOE, MOST, NEA	Announced during the November 2009 Presidential Summit, this shale gas initiative will use experience gained in the United States to assess China's shale gas potential, promote environmentally sustainable development of shale gas resources, conduct joint technical studies to accelerate development of shale gas resources in China, and promote shale gas investment in China through the U.S.-China Oil and Gas Industry Forum, study tours, and workshops.
2009	U.S.-China Energy Cooperation Program	A public-private partnership, including 22 companies as founding members, including Peabody Energy, Boeing, Intel and GE.	Announced during the November 2009 Presidential Summit, the U.S.-China Energy Cooperation Program (ECP) will leverage private sector resources for project development work in China across a broad array of clean energy projects on renewable energy, smart grid, clean transportation, green building, clean coal, combined heat and power, and energy efficiency.
2010	U.S.-China Strategic & Economic Dialogue	U.S. Department of State and NDRC/NEA	26 specific outcomes were produced by the second round of the S&ED under the Strategic track alone. Key outcomes addressing energy and climate issues specifically included MOUs on nuclear safety cooperation, EcoPartnerships, and Shale Gas; a joint statement on energy security; and three clean energy forums held each year.

**Addendum I: U.S.-China Cooperation on Clean Energy
and Climate Change, 1979-2014—Continued**

Year	Initiative	Participants	Purpose/Description
2010	U.S.-China Energy Efficiency Forum	NEA/NDRC, MIT, DOE/LBNL/ORNL/ FERC, private sector participants	This first meeting of this Forum (established in the 2009 U.S.-China Energy Efficiency Action Plan) included the signing of an MOU on industrial energy efficiency between Lawrence Berkley National Laboratory, Oak Ridge National Laboratory and the University of Science and Technology, Beijing.
2010	U.S.-China Renewable Energy Forum	NEA/NDRC, DOE/NREL/ FERC, private sector participants	The first meeting of this forum that was established in the 2009 U.S.-China Renewable Energy Partnership included a significant focus on potential cooperation opportunities between U.S. and Chinese renewable energy companies. The forum was followed by technical discussions that established three working groups on renewable energy, including: (1) planning, analysis and coordination; (2) wind technology; and (3) solar technology.
2010	U.S.-China Advanced Biofuels Forum	NEA/NDRC, DOE/NREL, private sector participants	The eight MOUs signed under this forum focus on private sector partnerships in advanced biofuels research and deployment. Private sector partnerships include: Boeing and PetroChina jointly developing a sustainable aviation biofuels industry in China; an expanded research collaboration between Boeing Research & Technology and the Qingdao Institute of Bioenergy and Bioprocess Technology on algae-based aviation biofuel development; and an inaugural flight using biofuel derived from biomass grown and processed in China conducted by Air China, PetroChina, Boeing and Honeywell.
2011	MOU for Protocol for Cooperation in Energy Sciences	U.S. Department of Energy and the Chinese Academy of Sciences	This Protocol will facilitate and promote cooperation in energy sciences such as nuclear energy sciences, biological science and environmental science.

**Addendum I: U.S.-China Cooperation on Clean Energy
and Climate Change, 1979-2014—Continued**

Year	Initiative	Participants	Purpose/Description
2011	U.S.-China Strategic & Economic Dialogue	U.S. Department of State and Department of Treasury, China Ministry of Foreign Affairs,	Decided to share information about regulatory experiences and practices of the Federal Energy Regulatory Commission and the National Energy Administration related to energy issues in both the United States and China. Also decided to enhance cooperation and analysis of the planning and deployment of large-scale wind projects research, and connecting wind projects to the electric transmission grid.
2011	MOU on Support of the Energy Cooperation Program	U.S. Trade & Development Agency (USTDA), NEA	Provides support for a wide range of clean energy activities in 2012. These include activities on clean fuels, energy efficiency, power generation, renewable energy, smart grid, and clean transportation.
2011	MOU for the advancement of Eco-Cities	DOE and the China Ministry of Housing and Urban Rural Development	Advance Eco-Cities Initiative in the United States and China, under which both sides will develop guidelines and policies to support the integration of energy efficiency and renewable energy into city design and operation.
2013	MOU for the creation of a Joint U.S.-China Green Data Center Industrial Initiative	U.S.-China Energy Cooperation Program (ECP) and Chinese Institute of Electronics (CIE)	Creation of a Joint U.S.-China Green Data Center Industrial Initiative aims to provide valuable reference and living best practices for green data center development in China through deep cooperation between both U.S. and China industries.
2013	MOU on U.S.-China Clean Energy Cooperation	China Industrial Overseas Development and Planning Association (CIODPA) and ECP's Energy Financing and Investment Working Group (EFI WG)	This MOU establishes the agreement for jointly cooperate initiatives that expand opportunities for U.S.-China collaboration in clean energy investment in the U.S. and other international markets. It also establishes a communication channel with ECP members and other key stakeholders to improve cooperation on Chinese investment in the energy sectors.

**Addendum I: U.S.-China Cooperation on Clean Energy
and Climate Change, 1979-2014—Continued**

Year	Initiative	Participants	Purpose/Description
2013	MOU in Support of U.S.-China Energy Cooperation Program	U.S. Trade and Development Agency (USTDA) and China's National Energy Administration (NEA)	This MOU will establish a work plan between USTDA and NEA that will cover a broad range of energy activities over the next year in support of ECP. Subjects include, but are not limited to: clean transportation (clean fuels), decentralized energy and combined cooling, heat and power, industrial energy efficiency, shale gas, renewable energy, smart grid and microgrid, and other fields as mutually determined. USTDA intends to continue contributing funding for feasibility studies, consultancies, study tours, workshops and related project development work on clean and efficient energy best practices, as identified in continued consultation with ECP, the NEA, and other Chinese government agencies.
2013	U.S.-China Strategic & Economic Dialogue	U.S. Department of State and Department of Treasury, China Ministry of Foreign Affairs	Established the U.S.-China Climate Change Working Group to develop and implement significant proposals for bilateral cooperation on climate change between the two. Also decided to enhance cooperation on energy security and transparency. Also signed an MOU on Enhancing Energy Regulation Cooperation between the Federal Energy Regulatory Commission and the National Energy Administration to expand cooperation on electricity, oil, and gas issues.
2013	MOU to lower carbon dioxide emissions	Xie Zhenhua, vice-minister of the National Development and Reform Commission of China, and California Governor Jerry Brown	A two-year agreement to share expertise and resources to reduce CO ₂ . It includes sharing of information and experiences regarding policies and programs to strengthen low carbon development across economic sectors. The MOU also includes exchanges and temporary assignments of personnel from one of the parties to the other; cooperative research on clean and efficient energy technologies, including developing shared research, development and deployment projects.

**Addendum I: U.S.-China Cooperation on Clean Energy
and Climate Change, 1979–2014—Continued**

Year	Initiative	Participants	Purpose/Description
2013	U.S.-China Energy Efficiency Forum	DOE and NDRC	MOUs were signed between Chinese partners and the University of Colorado-Boulder to initiate the International Center for Urban and Building Engineering Sustainability, the Digital Energy and Sustainability Solutions Campaign on comprehensive exchanges to improve the efficiency of the IT sector, and LBNL to harmonize standards and foster pre-competitive R&D collaboration on high performance data center.
2014	U.S.-China Strategic & Economic Dialogue	U.S. Department of State and Department of Treasury, China Ministry of Foreign Affairs	Launched eight demonstration projects—four on carbon capture, utilization, and storage, and four on smart grids. Agreed to adopt stronger heavy and light duty vehicle fuel efficiency and greenhouse gas emissions standards, conduct a study on the efficiency and use of gas in industrial boilers, and launched a new initiative on climate change and forests.
2014	MOU for cooperation on strategic petroleum reserves	U.S. Secretary of Energy Ernest Moniz and Administrator Wu Xinxiong of China's National Energy Administration, DOE, NEA	The MOU enables the DOE's Office of Petroleum Reserves and NEA's National Oil Reserve Office to share information on technical, management, and policy issues related to oil stockpiles. DOE and NEA will conduct annual technical meetings to be held alternately in the United States and China.
2014	MOU for cooperation on electric vehicles and industrial energy efficiency	U.S. Secretary of Energy Ernest Moniz and Minister Miao Wei of the Chinese Ministry of Industry and Information Technology	The MOU facilitates cooperation in the fields of electric vehicles and related technologies, as well as energy efficiency improvement for end use products.

Source: Agreements for the 1979–2010 period adapted from Joanna Lewis, “The State of U.S.-China Relations on Climate Change: Examining the Bilateral and Multilateral Relationship,” *China Environment Series*, no. 11 (December 2010): 26–34. <http://www.wilsoncenter.org/sites/default/files/Feature%20Article%20The%20State%20of%20U.S.-China%20Relations%20on%20Climate%20Change.pdf>. Agreements for the 2011–2014 period compiled by Commission staff.

Addendum II: CERC Research Topics¹⁰³***Advanced Coal Technology Consortium (ACTC)***

ACTC focuses on the most critical research needs, categorized by the following eight research areas:

1. **Advanced Power Generation:** Develop breakthrough technologies in advanced coal power generation and the application of advanced technology.
2. **Clean Coal Conversion Technology:** Conduct research, development, and demonstration of new coal co-generation systems with CO₂ capture, including new coal-to-chemical co-generation; new CO₂ capture processes; and co-generation systems with combined pyrolysis, gasification, and combustion. Projects in this area will pursue high-efficiency conversion.
3. **Pre-Combustion CO₂ Capture:** Conduct major industrial-scale demonstrations of integrated gasification combined cycle (IGCC) power generation with carbon capture and sequestration.
4. **Post-Combustion CO₂ Capture:** Investigate various technologies for post-combustion capture and conduct demonstrations of CO₂ capture, utilization, and storage in cooperation with large power generation companies.
5. **Oxy-Combustion Research, Development, and Demonstration:** Study the fundamental and pilot-scale combustion and emission characteristics of indigenous Chinese and U.S. coals of different ranks under oxyfuel conditions, create a model for oxy-fired burner design, evaluate and optimize pilot-scale oxy-combustion, and conduct a commercial-scale engineering feasibility study for an oxyfuel-combustion reference plant, with the goal of achieving cost and performance breakthroughs in the laboratory and the field that help overcome the challenges to oxyfiring with both U.S. and Chinese coals.
6. **Sequestration Capacity and Near-Term CCUS Opportunities:** Develop research work focused on CO₂ geological sequestration (CGS) in China's Ordos Basin to better understand and verify key technologies for CO₂ storage in saline formations, to provide the scientific evidence to implement large-scale carbon capture and storage (CCS) in China and to provide support for CCS development in the United States.
7. **CO₂ Algae BioFixation and Use:** Support the industrial demonstration of carbon biofixation using microalgae to absorb CO₂ and turn the biomass produced into a rich source of renewable energy, including biodiesel.
8. **Integrated Industrial Process Modeling and Additional Topics:** Apply modeling techniques to a wide variety of issues associated with pre- and post-combustion CO₂ capture and oxy-combustion to assess the economic and operability potential of existing capture technologies in conjunction with removal of criteria pollutants, assess the technical feasibility and potential economic benefit and operability of new carbon capture technologies, and optimize the economics of different carbon capture technologies.

Clean Vehicles Consortium (CVC)

CVC research is organized into six areas:

1. **Advanced Batteries and Energy Conversion:** Increase application of novel battery designs that promise much higher energy densities, such as lithium-air and lithium-sulfur batteries; develop high efficiency thermoelectric materials to recover waste heat.
2. **Advanced Biofuels, Clean Combustion, and Auxiliary Power Unit (APU):** Accelerate development and deployment of advanced biofuels with molecular models that can be used to predict the behavior of novel fuels in various combustion environments; system controls for clean vehicles; and development, integration, and control of APU systems.
3. **Vehicle Electrification:** Develop electric motors and power electronics with higher conversion efficiencies and power/energy densities than are currently possible.
4. **Advanced Lightweight Materials and Structures:** Develop low-cost, energy-efficient, high-quality processes for producing, forming, and joining of lightweight materials to increase integration of aluminum alloys, magnesium alloys, and carbon-polymer composites into vehicle structures while maintaining structural rigidity and crash safety.
5. **Vehicle-Grid Integration:** Develop advanced control strategies and protocols to coordinate plug-in electric vehicle (PEV) charging and develop interfaces to accelerate the deployment of PEVs and minimize impact to grid quality and battery aging.

6. Energy Systems Analysis, Technology Roadmaps, and Policies: Integrate vehicle and energy infrastructure systems to address temporal and spatial variation of energy sources, petroleum demand, and CO₂ emissions impacts; diversity in consumer drive cycles and trip patterns; producer and consumer economic factors; global vehicle and fuel market factors; and future fuel efficiency and carbon policy regimes.

Building Energy Efficiency Consortium (BEE)

BEE has developed a collaborative research agenda organized into six research topics:

1. Integrated Building Design & Operation of Very Low Energy, Low Cost Buildings: Provide a rich foundation to support prioritization of energy savings opportunities from buildings. Research in this topic area is focusing on new scientific methods for collecting data and modeling energy consumption that will guide development of high-impact energy efficiency technologies.
2. Building Envelope: Develop new building materials and related control and integration systems. Research in this area improves understanding and strategies for ventilation, comfort systems, and cool roofs.
3. Building Equipment: Research and demonstrate the adaptability of advanced building equipment technologies. Research in this area includes new lighting system design and control and improvements to the performance and market penetration of climate control (heating, ventilation, and cooling) technologies. Research includes integrating building equipment with control systems and metering equipment and optimizing management software.
4. Renewable Energy Utilization: Research and demonstrate technological adaptability in applying new and renewable energy to buildings. This research area includes integration of geothermal, solar, and wind energy systems, among others, to convert buildings from energy consumers to net energy suppliers.
5. Whole Building: Research and demonstrate integrated building energy technologies. Research in this area includes analyzing building energy use in the United States and China to improve building integration and optimize the use of energy-efficient and low-carbon energy supply technologies.
6. Operation, Management, Market Promotion and Research: Evaluate standards, certification, codes and labels, and other policy mechanisms to establish a knowledge base from which to make effective decisions.

ENDNOTES FOR SECTION 4

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RECOMMENDATIONS

U.S.-China Bilateral Trade and Economic Challenges

The Commission recommends:

- Congress direct the Government Accountability Office to update its report on the effectiveness of the U.S.-China Joint Commission on Commerce and Trade (JCCT) and the Strategic and Economic Dialogue (S&ED). The updated report should include an assessment of the objectives sought by the United States in these talks and whether China has honored its commitments to date.
- Congress require the Department of the Treasury to include in its semiannual report to Congress specific information on the beneficial economic impact of China moving to a freely floating currency in terms of U.S. exports, economic growth, and job creation. In addition, Congress should urge the Administration to begin immediate consultations at the G-7 to identify a multilateral approach to addressing China's currency manipulation.
- Congress direct the Interagency Trade Enforcement Center (ITEC) to provide briefings to the House Ways and Means and Senate Finance Committees and the House and Senate Appropriations Committees on its activities, since its creation, to coordinate and improve upon the enforcement of U.S. laws against unfair trade. Congress should examine whether providing statutory authority for ITEC would enhance enforcement activities and ensure that adequate resources are available and that other Departments and Agencies are responsive to its requests.
- Congress consider amending existing trade enforcement rules to ensure that foreign investment in the United States cannot be used to impede the ability of domestic producers to bring petitions for trade enforcement actions. Congress could direct the Department of Commerce to update its regulations and procedures for antidumping and countervailing duty cases to create a rebuttable presumption that firms that are state-owned, state-controlled, or state-invested with facilities in the United States are operating at the direction of the state. Those state-directed companies would then be excluded from calculations of industry support or opposition unless they can prove that there is no such involvement or direction.
- Congress consider whether state and local governments should be treated as interested parties under laws against unfair trade and thereby have standing to bring or participate in trade cases. Further, Congress should consider creating a private right of action allowing U.S. companies to take legal action against com-

petitors directly in antidumping and countervailing duty cases, rather than having to rely on U.S. government assistance.

- Congress seek clarification from the executive branch as to its interpretation of Article 15 of China's World Trade Organization Accession Protocol concerning China's achievement of "market economy" status.
- Congress consider legislation that would make available a remedy to domestic firms that have been injured from the anti-competitive actions (such as access to low-cost or no-cost capital) of foreign state-owned companies for the injury that has been inflicted and allow for the potential award of treble damages.
- Congress direct the Council of Economic Advisors (CEA) to brief the Joint Economic Committee on existing data collection efforts within the Administration regarding investments by Chinese entities in the United States. CEA shall describe the differing data sets available from public and private sources and the extent to which existing data provides adequate information to U.S. policy makers to assess changing trends and the potential economic implications from these investments.
- Congress require the Department of Commerce to prepare a comprehensive analysis of excess productive capacity in China across a range of sectors, including, but not limited to, steel, glass, paper, cement and solar products, and provide a report to the President and to Congress on what actions should be taken to address this problem. This report shall be prepared annually for a period of five years, at a minimum. In addition, the Administration should consult with major trade allies with similar concerns about Chinese overcapacity in these sectors to determine what multilateral engagement would effectively deal with this problem. As part of this approach, the Administration shall evaluate effectiveness of other efforts to address global and China's overcapacity in certain sectors, such as the Organization for Economic Cooperation and Development Steel Committee, the U.S.-China Steel Dialogue, JCCT and S&ED talks.
- Congress request that the Office of the United States Trade Representative, Department of Commerce, and International Trade Commission report to Congress on the extent to which existing authorities would allow for sanctions to be imposed against entities that benefit from trade secrets or other information obtained through cyber intrusions or other illegal means and were provided by a national government, foreign intelligence service, or other entity utilizing such means. If authorities do not exist, they should provide a proposal to address such problems.
- Congress require the Office of the United States Trade Representative to brief the House Ways and Means and Senate Finance Committees, within 60 days, on trade enforcement issues involving China which have been initiated or announced since 2009, but have not yet been resolved, and identify what steps will be taken to ensure a more rapid resolution of such issues. The briefing shall include an estimate of the economic value to

the U.S. in terms of production and job creation, if the identified market barrier or impediment were eliminated.

China’s Healthcare Industry, Drug Safety, and Market Access for U.S. Medical Goods and Services

The Commission recommends:

- Congress urge the Institutes of Medicine of the National Academies to convene a task force to assess purchasing decisions by U.S. wholesalers, retailers, and healthcare providers with regard to China-origin drugs and drug ingredients, and to recommend ways in which to improve information sharing and coordination with the Food and Drug Administration (FDA).
- Congress urge the FDA to insist on expedited approvals from the Chinese government for work visas for the FDA staff, and on expanded authority to conduct unannounced visits at drug manufacturing facilities in China.
- Congress monitor the efficacy of the FDA’s regulatory activities in China, consider ways to optimize the use of appropriated funding, and identify what other steps are necessary to protect the health and safety of the U.S. population.
- Congress pursue measures to improve the government’s information about drug ingredient and dietary supplement producers, especially for imports. To this end, Congress should urge the FDA to work with its Chinese counterparts to establish a more comprehensive regulatory regime for registering China-based active pharmaceutical ingredient (API) producers, and make this producer information available on demand for U.S. agencies.
- Congress adopt measures that make greater use of “track and trace” technology. To this end, Congress should: (1) urge the U.S. government negotiators to demand that China harmonize with internationally recognized standards its unique device identifiers for medical devices and its serialized verification of APIs, so as to allow for equivalency with U.S. systems and standards; (2) make the use of serial numbers for product verification at U.S. pharmacies mandatory at all times, not only in cases where a product is suspect (as currently spelled out in the Drug Quality and Security Act).
- Congress direct the Trade Policy Review Group of the Office of the U.S. Trade Representative to review the interests of U.S. healthcare goods and services providers in the Chinese market, Chinese market barriers, and opportunities to promote human health in China in ways that promote U.S. consumer and business interests.

U.S.-China Clean Energy Cooperation

The Commission recommends:

- Congress direct the Government Accountability Office to conduct an assessment of U.S.-China collaborative initiatives on clean energy. This assessment should describe the nature of collabora-

tion, including funding, participation, and reporting on the outcomes; consider whether the intellectual property rights of U.S. researchers and companies are being protected; examine whether Chinese state-owned enterprises are benefitting from U.S. taxpayer-funded research; investigate if any U.S. companies, universities and labs participating in government-led collaboration with China have been subject to cyber penetrations originating in China; and evaluate the benefits of this collaboration for the United States. Further, this assessment should examine redundancies, if any, among various U.S.-China government-led collaborative programs, and make suggestions for improving collaboration.

- Congress require that the Department of Energy, in consultation with the Department of Commerce, identify barriers to market access in China for clean and renewable energy products and services and their impact on U.S. production and job creation, and report to the committees of jurisdiction, within 120 days, on specific action plans to address these barriers. As part of this report, the Departments shall identify sourcing patterns that have changed over the last 10 years in these sectors and also the extent to which U.S. companies are producing in the Chinese market to serve that market and whether they were previously able to manufacture these products in the United States for export to China.

CHAPTER 2

MILITARY AND SECURITY ISSUES INVOLVING CHINA

SECTION 1: YEAR IN REVIEW: SECURITY AND FOREIGN AFFAIRS

Introduction

This section reviews aspects of China's national security and foreign affairs that have emerged since the Commission published its previous Annual Report in November 2013. It also addresses the People's Liberation Army's (PLA's) most significant activities of the year, and the evolving U.S.-China security relationship. The statements and assessments presented here are based on Commission hearings, briefings by U.S. and foreign government officials, the Commission's fact-finding trips to Asia, and open-source research and analysis. For a full treatment of China's military modernization, see Chapter 2, Section 2, "China's Military Modernization." For an in-depth discussion of how China's security and foreign policies impact East Asia, see Chapter 3, Section 1, "China and Asia's Evolving Security Architecture."

China's Major National Security and Foreign Policy Developments in 2014

Since the publication of the Commission's 2013 Annual Report, China's national security and foreign policy apparatuses have established several new institutions, norms, and policies designed to advance China's expanding and evolving interests.

China Establishes a "Central National Security Commission"

The Chinese Communist Party (CCP) Central Committee announced at its November 2013 Third Plenary Session that it would establish a Central National Security Commission to "perfect national security systems and strategies in order to ensure national security."*¹ The Central National Security Commission's status as an agency under the Central Committee makes it the most comprehensive security policy-making body in the Chinese government.

* China's Central National Security Commission is comparable to the United States' National Security Council insofar as both bodies deliberate and coordinate national security policies. A key difference between the two is that the former is a Party organization while the latter is a government organization. Further, China's Central National Security Commission appears to have a much broader mandate, particularly on domestic issues, than the U.S. National Security Council.

Chinese President Xi Jinping heads the Central National Security Commission, which convened for the first time in April 2014.

The Central National Security Commission's broad mandate allows it to establish and direct policy over a wide range of issues, which include political security, homeland security, military security, economic security, cultural security, societal security, science and technology security, information security, ecological security, resources security, and nuclear security.² Its four responsibilities with respect to each of these issues are "stipulating and implementing state security strategies, pushing forward the construction of the rule of law system concerning state security, setting security principles and policies, [and] conducting research."³

The Central National Security Commission's mandate covers both internal and external security issues; however, official Chinese statements, Chinese academics and policy experts, and Chinese state media indicate it likely will focus on the former.⁴ According to Fudan University Associate Dean Shen Dingli, the Central National Security Commission's internal focus suggests President Xi has determined "domestic factors [will] pose the most substantial challenge to [China's] national security for decades to come."⁵ For an in-depth discussion of China's internal security challenges, see Chapter 2, Section 3, "China's Domestic Stability."

By establishing the new Central National Security Commission, President Xi seeks to (1) improve the coordination of China's national security decision making, and (2) consolidate his control over China's national security agenda.

First, the Central National Security Commission's high-level status and its oversight of China's vast and convoluted security policy-making apparatus appear designed to overcome stovepiping, turf battles, and other bureaucratic obstacles to effective and efficient policy making.* President Xi, citing inadequate "security work systems and mechanisms," argued the Central National Security Commission was needed to "strengthen centralized, unified leadership over national security work."⁶

Second, and relatedly, the Central National Security Commission appears designed to improve President Xi's ability to personally control China's national security activities. Although much of the Central National Security Commission's composition is unknown to foreign observers, at least two of President Xi's political allies—Cai Qi and Meng Jianzhu—are rumored to hold prominent positions,† which they likely will use to support President Xi's security priorities. Placing his close associates on the Central National Security Commission also allows President Xi to minimize the influence of political rivals in the national security decision-making process.⁷

*The Central National Security Commission's portfolio of security issues overlaps with several of China's leading small groups. Leading small groups are the CCP's ad hoc policy and coordination working groups, the membership of which consists of Chinese political elites. The work and activities of the leading small groups are generally not transparent, and it is unclear whether or how the new Central National Security Commission will restructure, govern, or marginalize existing leading small groups for national security issues.

†Cai Qi is the former deputy governor of Zhejiang Province; Meng Jianzhu is a Politburo member and in 2012 succeeded Zhou Yongkang as secretary of the CCP's Central Politics and Law Commission, which oversees legal and law enforcement issues. The only confirmed members of the Central National Security Commission besides President Xi are two of his fellow Politburo Standing Committee members, Premier Li Keqiang and Chairman of the Standing Committee of the National People's Congress Zhang Dejiang.

In addition to providing the means to advance his control over China's national security policy, President Xi's ability to establish the Central National Security Commission in the first place is indicative of his remarkably swift consolidation of power since he became General Secretary of the Central Committee of the CCP in 2012. For at least ten years, Chinese leaders had tried and failed to establish similar national security bodies; it is, therefore, particularly meaningful that President Xi was able to secure support from the multiple stakeholders required to finally establish the Central National Security Commission.*

Xi Administration Signals a More "Active" Foreign Policy

Another indication of President Xi's consolidation of power is his success in articulating and directing a much more proactive foreign policy than his predecessors. In March 2014, Chinese Foreign Minister Wang Yi held a high-profile press conference on foreign policy issues during which he said, "'Active' is the most salient feature of China's diplomacy in the past year. . . . In 2014, China will continue to pursue an active foreign policy."⁸ Foreign Minister Wang's remarks are consistent with the Xi Administration's early steps to redefine China's relationship with the world, including its efforts to promote a "new type of major-country relationship" with the United States, which was a key theme of U.S.-China relations in 2013.†

China's foreign policy under President Xi appears to represent a break from former paramount leader Deng Xiaoping's foreign policy tenet to "hide capacities and bide time." "Hide and bide"—the idea that China should seek to develop its economy and society successfully, respond to global events calmly and humbly, and conceal its military capabilities—has served as the basis for China's foreign policy decision making since the early 1990s. President Xi's policy shift is driven by a confluence of factors, including China's expanding regional and global interests; China's growing number of foreign policy actors, some of whom favor a more active global role for China; and China's increasing confidence in its ability to use economic and military tools to achieve its foreign policy objectives.⁹

*In an interview for the *Wall Street Journal*, senior advisor and Freeman Chair in China Studies at the Center for Strategic and International Studies Christopher K. Johnson said of the Central National Security Commission's establishment, "I think this is huge. They've been talking about this forever and Xi Jinping has gone and done it in his first year in office. . . . He's showing that he controls all the levers of power." Jeremy Page, "China Deepens Xi's Powers with New Security Plan," *Wall Street Journal*, November 12, 2013. <http://online.wsj.com/news/articles/SB10001424052702304644104579193921242308990>. See also Marc Julienne, *How Far Will the NPC Go in Implementing Reform: The New Central National Security Commission* (European Council on Foreign Relations, March 2014), p. 6. http://www.ecfr.eu/page/-/ChinaAnalysis_March2014.pdf; and Yun Sun, "PacNet #81: China's New 'State Security Committee': Questions Ahead," *Pacific Forum CSIS*, November 14, 2013. http://csis.org/files/publication/Pac1381_0.pdf.

†Beginning in 2012 and increasingly throughout 2013, Beijing called for a "new type of major-country relationship" with the United States. Official Chinese statements claim the "new type" relationship intends to promote stable relations between China and the United States and avoid the kind of deleterious competition that typically plagues relationships between dominant powers and rising powers. The Obama Administration since late 2013 has sometimes invoked the concept (which it usually refers to as a "new model" of relations) when discussing bilateral ties with China. Caitlin Campbell and Craig Murray, *China Seeks a "New Type of Major-Country Relationship" with the United States* (U.S.-China Economic and Security Review Commission, June 25, 2013). http://origin.www.uscc.gov/sites/default/files/Research/China%20Seeks%20New%20Type%20of%20Major-Country%20Relationship%20with%20United%20States_Staff%20Research%20Backgrounder.pdf; U.S.-China Economic and Security Review Commission, *2013 Annual Report to Congress*, November 2013, p. 229; and U.S. Department of State Bureau of International Information Programs, "U.S., China Agree to 'New Model' of Relations, Kerry Says." <http://iip.digital.usembassy.gov/st/english/inbrief/2013/09/20130919283179.html>.

China's "Peripheral Diplomacy"

A key element of China's new, active foreign policy is the concept of "peripheral diplomacy." Peripheral diplomacy, which emphasizes China's relations with countries in its immediate neighborhood, was the topic of a high-level foreign policy meeting held in October 2013 by the Politburo Standing Committee and attended by other high-level officials.¹⁰ The event was the highest-level foreign policy meeting since 2006. In it, President Xi said China should "strive for obtaining an excellent peripheral environment for our country's development, bring even more benefits of our country's development to peripheral countries, and realize common development."¹¹ Beijing's emphasis on strengthening ties with neighboring countries has been ongoing since the first year of the Xi Administration, during which 12 of the 22 countries visited by President Xi and Premier Li Keqiang were China's close neighbors.¹²

China's focus on building positive relations with its neighbors has manifested in several new diplomatic initiatives, including the "Silk Road Economic Belt," the "21st Century Maritime Silk Road," and the "Bangladesh-China-India-Myanmar Economic Corridor."¹³ Notably, each of these three initiatives heavily emphasizes economic cooperation and integration. Although the initiatives are in their early stages, Beijing's enthusiasm and initial steps toward implementation indicate China's emphasis on peripheral diplomacy is not merely rhetorical.

Silk Road Economic Belt: During a trip to Kazakhstan in late 2013, President Xi proposed establishing a Silk Road Economic Belt from China through Central Asia to Europe for the purpose of enhancing regional economic and cultural integration (see Figure 1).¹⁴ Soon thereafter, representatives from 24 cities in China, Georgia, Iran, Kazakhstan, Kyrgyzstan, Tajikistan, Turkey, and Turkmenistan signed an agreement to establish the Silk Road Economic Belt.¹⁵ According to President Xi, the Silk Road Economic Belt should seek to "build policy communication" in the region by having "full discussions on development strategies and policy response[s]"; "improve road connectivity" between the Pacific Ocean and the Baltic Sea; "promote unimpeded trade" by removing trade and investment barriers; "enhance monetary circulation" by settling trade in local currencies; and "increase understanding between our people" by encouraging people-to-people exchanges.¹⁶

China also likely intends for this new regional arrangement to facilitate access to Central Asian natural resources, particularly oil and natural gas,* and encourage economic development and stability in China's underdeveloped and restive Xinjiang Uyghur Autonomous Region.¹⁷ In addition, Beijing also likely seeks to emphasize to foreign observers its largely positive and peaceful relations with its western neighbors while diverting attention from its coercive actions against many of its East Asian maritime neighbors,

*China's quest for energy security is a primary driver of its engagement in Central Asia, a region rich in oil and natural gas. For a discussion of China's energy engagement with Central Asia, see House Foreign Affairs Subcommittee on Europe, Eurasia, and Emerging Threats, *Hearing on the Development of Energy Resources in Central Asia*, written testimony of Dennis Shea, May 21, 2014. http://origin.www.uscc.gov/sites/default/files/Shea_Testimony_China%E2%80%99s%20Energy%20Engagement%20with%20Central%20Asia%20and%20Implications%20for%20the%20United%20States_0.pdf.

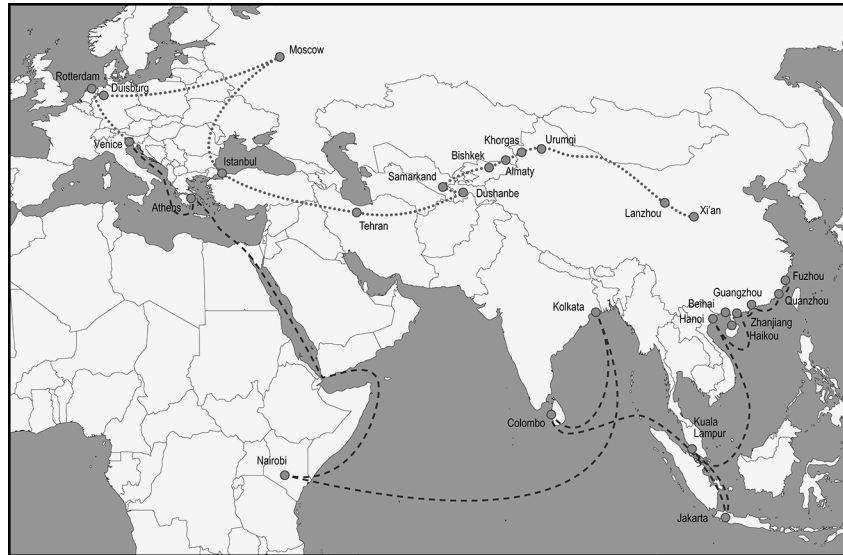
discussed below.¹⁸ Uncertainty about the impact U.S. withdrawal from Afghanistan will have on the region may be another factor behind Beijing's efforts to bolster its presence in Central Asia. China in recent years has steadily increased economic, political, and security engagement with Afghanistan and has indicated it intends to play a stabilizing role in Afghanistan in the future.*

21st Century Maritime Silk Road: Soon after President Xi proposed the Silk Road Economic Belt, he introduced its corollary, the 21st Century Maritime Silk Road, a maritime thoroughfare running from China's coast through maritime Southeast Asia and the Indian Ocean to Africa and the Mediterranean Sea (see Figure 1).¹⁹ Thus far, there is no agreement formalizing participation in the initiative. According to Chinese state-run media, a Chinese Ministry of Foreign Affairs spokesperson stressed that the 21st Century Maritime Silk Road is an "open" initiative and that China welcomes "suggestions from other countries to perfect it."²⁰

Projects associated with the Maritime Silk Road will focus on maritime transport infrastructure.²¹ The arrangement also likely will serve as a symbolic banner under which China and other countries along the route can extol cooperative efforts in the political realm and by which China can reassure its maritime neighbors—many of which have territorial disputes with China—that it seeks to play a cooperative, rather than confrontational, role in Asia's maritime commons.²²

* China has demonstrated a growing interest in stability and security in Afghanistan. For example, in 2012, Zhou Yongkang—then China's top security official—visited Afghanistan, where he signed economic and security agreements, including one to send 300 Afghan police officers to China for training. Mr. Zhou had been the highest-ranking official to visit the country in 46 years. More recently, China established a diplomatic position of Special Envoy for Afghan Affairs, "so as to step up the communication with Afghanistan and all parties concerned and safeguard lasting peace, stability and development of Afghanistan and the region." In the near term, however, China is unlikely to take on a military role in Afghanistan like that of the United States. China Ministry of Foreign Affairs, "Foreign Ministry Spokesperson Hong Lei's Remarks on the Foreign Ministry's Establishment of the Special Envoy for Afghan Affairs," July 18, 2014. http://www.fmprc.gov.cn/mfa_eng/xwfw_665399/s2510_665401/t1175878.shtml; U.S.-China Economic and Security Review Commission, *2012 Annual Report to Congress*, November 2012, p. 320; and Michael Martina, "China Will Not Fill U.S. Void in Afghanistan: Official," Reuters, July 21, 2014. <http://www.reuters.com/article/2014/07/21/us-china-afghanistan-idUSKBN0FQ12I20140721>.

Figure 1: China's Proposed "Silk Road Economic Belt" and "21st Century Maritime Silk Road"



This map, adapted from one featured on the website of Chinese official media outlet Xinhua, traces China's proposed "Silk Road Economic Belt" (the northern section of the loop), and "21st Century Maritime Silk Road" (the southern section of the loop). Locations are not exact. For the original map, see Xinhua (English edition), "New Silk Road, New Dreams." <http://www.xinhuanet.com/world/newsilkway/index.htm>.

Bangladesh-China-India-Myanmar (BCIM) Economic Corridor: According to officials from participating countries, the BCIM Economic Corridor is meant to "advance multi-modal connectivity, harness the economic complementarities, promote investment and trade and facilitate people-to-people contacts."²³ Like the Silk Road Economic Belt, BCIM aims to bring economic development, mostly in the form of transport infrastructure, to rural regions in each of the participating countries.²⁴ Beijing and New Delhi in particular probably will seek to use BCIM as a way to cooperate and build trust to attempt to defuse simmering bilateral political and security tensions.

China Establishes Development Bank with Other BRICS Countries

To complement and reinforce its efforts to increase its influence in peripheral regions, China also is strengthening its global presence by contributing to the New Development Bank, which was established in July 2014 by BRICS countries (Brazil, Russia, India, China, and South Africa). The bank, meant to fund "infrastructure and sustainable development projects in BRICS and other emerging and developing countries,"²⁵ is headquartered in Shanghai and has an initial subscribed capital of \$50 billion, which later will be increased to \$100 billion.²⁶ (By comparison, the World Bank has \$232 billion in capital.)²⁷ China, having provided 41 percent of the initial \$50 billion in capital for the bank, likely will enjoy a higher degree of control over how money is spent than the other BRICS

countries. Several observers welcomed the creation of the New Development Bank and heralded its potential to fill infrastructure gaps in low- and middle-income countries. Others, however, have questioned the credibility of the institution (and the countries it represents) as a globally responsible leader.²⁸ For example, China's lending practices sometimes attract criticism for undermining good governance and environmental sustainability in recipient countries.²⁹

China's New Foreign Aid White Paper

When Foreign Minister Wang extolled China's "active" foreign policy in early 2014, he noted that one of its central characteristics was "playing the role of a responsible, big country."³⁰ One manifestation of China's efforts to play this role is its foreign aid programs. Although China has had such programs for decades, it appears to have made foreign aid a higher priority since 2011, when it released its first foreign aid white paper.* The white paper, China's most authoritative publication on the subject, noted China's total foreign aid through 2009 reached around \$40 billion and had increased by almost 30 percent year-on-year between 2004 and 2009.³¹ China's second foreign aid white paper, which was released in July 2014 and covers the years 2010 through 2012, during which China appropriated about \$14.4 billion in aid,† notes "China will continue to increase the input in foreign assistance" in the future. The paper does not, however, provide any details on China's future foreign aid budget.³²

The 2014 white paper identifies two objectives for Chinese foreign aid: improving people's livelihood (primarily through projects in the areas of agriculture, education, and public welfare) and promoting economic and social development (primarily through infrastructure development). Infrastructure development accounted for almost half (45 percent) of China's allocated foreign aid from 2010 to 2012.³³

China's foreign aid has been and will continue to be an important foreign policy instrument for Beijing. China's "no strings attached" giving, along with its emphasis on solidarity among developing countries, South-South cooperation,‡ and "win-win" relationships, appeals to recipient governments that often resent the conditionality typical of foreign aid from Western countries and lending institutions. China's particular brand of foreign aid bolsters its reputation among governments in the developing world, particularly in Africa, which received 52 percent of Chinese aid from 2010 to 2012.³⁴ Beijing almost certainly will continue to use foreign aid and

*The Chinese government has released dozens of white papers over the years on a variety of economic, foreign policy, political, military, and social issues. These papers serve both informational and propaganda purposes.

†Official Chinese statistics generally blur the distinction between development finance and aid, often referring to them both as "aid." Yun Sun, *China's Aid to Africa: Monster or Messiah?* (The Brookings Institution, February 2014). <http://www.brookings.edu/research/opinions/2014/02/07-china-aid-to-africa-sun>.

‡China's foreign policy in recent years has increasingly emphasized the importance of South-South cooperation, which the United Nations defines as "a broad framework for collaboration among countries of the South in the political, economic, social, cultural, environmental and technical domains. Involving two or more developing countries, it can take place on a bilateral, regional, subregional or interregional basis." United Nations Office for South-South Cooperation, "What Is South-South Cooperation?" http://ssc.undp.org/content/ssc/about/what_is_ssc.html.

other means to cultivate the perception that China is a friend to the developing world.³⁵

Though recipient governments have warmly welcomed China's foreign aid, human rights groups and local populations in recipient countries have been critical.³⁶ China has gained a reputation for using Chinese companies and workers for its foreign aid projects instead of empowering local businesses and people, and for not respecting labor, safety, or environmental regulations in the course of its foreign aid projects.³⁷ Whether the Chinese government is willing and able to improve upon this model will shed light on China's progress toward becoming a truly "responsible" global leader.

China's effort to project an image of itself "playing the role of a responsible, big country" is at odds with its increased aggressiveness toward its neighbors and willingness to flout international laws and norms. Further, its commitment to "playing the role of a responsible, big country" only seems to be a salient feature of China's foreign policy when "being responsible" is in Beijing's own narrow national interests.³⁸ Indeed, China's foreign policy rebranding obscures the fact that one of China's fundamental foreign policy objectives—to preserve China's economic growth and the continuity of CCP rule—has not changed. Foreign Minister Wang suggested as much when he said the primary purpose of China's foreign policy is to "serv[e] the efforts of comprehensively deepening reform in China," "creat[e] a more enabling external environment for domestic reform and development," and "creat[e] more favorable conditions for the transformation and upgrading of China's economy."³⁹

In the near term, China's foreign policy almost certainly will feature more robust external engagement, particularly with its neighbors in Asia. However, Beijing is unlikely to fundamentally reorient its external relations to take on greater responsibility for regional and global challenges. Instead, Beijing will continue to marshal its diplomatic capabilities to advance China's own interests, sometimes at the expense of other countries. Nowhere in China's external relations is this clearer than in China's management of its territorial disputes in the South and East China Seas.

Key Developments in China's Maritime Territorial Disputes in 2014

Since the Commission published its 2013 Annual Report, China has increasingly used coercion to consolidate control over its territorial claims in the South and East China Seas.* Although China's actions are consistent with a pattern of assertiveness in its maritime disputes since approximately 2009, Beijing until late 2013 often justified this assertiveness by claiming it was merely responding to rival claimants' efforts to secure territorial gains in disputed waters. For example, China defended its sharply increased air and maritime presence near the East China Sea's Senkaku Is-

* For the Commission's assessment of the economic implications of China's maritime disputes, see Chapter 1, Section 1, "Year in Review: Economics and Trade." For past Commission assessments of China's objectives, strategies, and behavior related to its territorial disputes in the South and East China Seas, see U.S.-China Economic and Security Review Commission, *2013 Annual Report to Congress*, November 2013, pp. 266–294; U.S.-China Economic and Security Review Commission, *2012 Annual Report to Congress*, November 2012, pp. 215–242; and U.S.-China Economic and Security Review Commission, *2011 Annual Report to Congress*, November 2011, pp. 166–172.

lands in 2012, claiming it was in response to Japan nationalizing the islands. Similarly, when the Philippines deployed a naval ship to the South China Sea in response to illegal Chinese fishing activities at Scarborough Reef in 2012, China responded opportunistically by establishing a near-constant maritime presence in and around the Reef. After the Philippine ships exited the Reef as part of a U.S.-mediated deal for both countries to simultaneously leave the area and reduce tensions, China apparently reneged on the agreement, keeping its ships at the Reef.⁴⁰ Since then, China has effectively controlled access to the Reef.⁴¹

Since late 2013, however, China has been more willing to advance its sovereignty claims without using a perceived provocation by a rival claimant to justify its actions. Ely Ratner, senior fellow and deputy director of the Asia Pacific Security Program at the Center for a New American Security, explained:

Although China began acting more assertively after perceiving its ascension to great power status in the wake of the global financial crisis, Beijing still felt compelled to justify its muscular movements in Asia as necessary reactions to the provocations of “troublemakers” in the region. Sure, China was standing strong, but arguably in response to the adventurism of others. It was more retaliatory than overtly belligerent.

As Beijing made a habit of tempering and justifying its behavior, leading Western analysts developed terms like “reactive assertiveness” and described Chinese revisionism as “cautious and considered.” ... [Since late 2013] however, China’s efforts to alter Asia’s geography have become unequivocally self-initiated. ... China is changing the status quo in Asia because it wants to and thinks it can. Xi Jinping is a confident and powerful leader with a high-priority to-do list, and he’s increasingly enabled with greater capabilities and the institutions to deploy them. Mix in an economic slowdown and a healthy dose of nationalism and you have a recipe for revisionism.⁴²

The three most significant manifestations of this new, even more assertive turn are China’s establishment of an Air Defense Identification Zone (ADIZ) in the East China Sea in November 2013; its relocation of an oil rig to waters disputed by Vietnam in the South China Sea in May 2014; and its ongoing attempts to prevent the Philippines from resupplying its military outpost at Second Thomas Shoal in the South China Sea.

China Establishes an ADIZ in the East China Sea: China’s Ministry of Defense in November 2013 declared an ADIZ over a portion of the East China Sea. The new East China Sea ADIZ is the boldest of China’s recent attempts to demonstrate control, sovereignty, and administration of disputed areas in the East China Sea. Beijing claims the ADIZ, which includes airspace over areas claimed by Japan and South Korea, is necessary to “[protect] state sovereignty and territorial and airspace security” in the East China Sea.⁴³

Putting China's ADIZ in Context

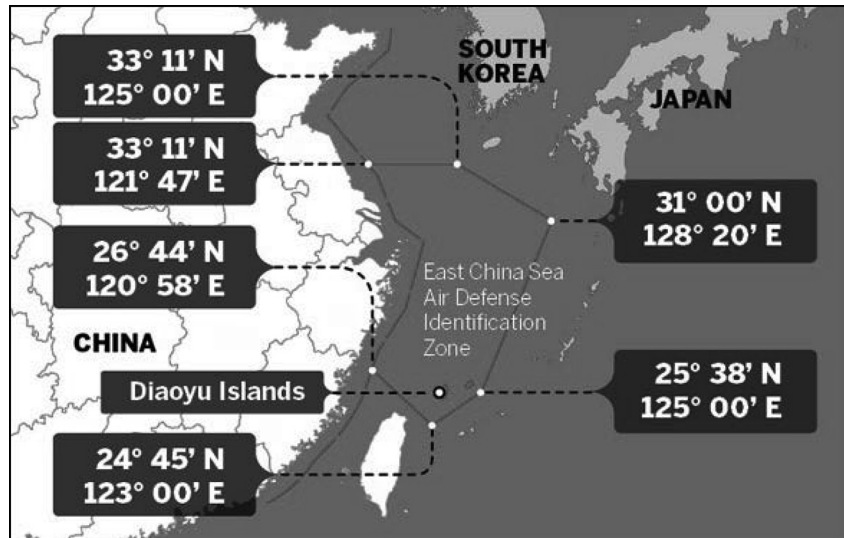
An ADIZ is a publicly-declared area established in international airspace adjacent to a state's national airspace in which civil aircraft must be prepared to submit to local air traffic control and provide aircraft identifiers and location. Its purpose is to allow a state the time and space to identify the nature of approaching aircraft prior to entering national airspace in order to prepare defensive measures if necessary.⁴⁴ The United States established the first ADIZ during the Cold War, and today several countries maintain ADIZs for security reasons.⁴⁵

ADIZs are not prohibited or otherwise explicitly addressed in international law.⁴⁶ This allows states significant flexibility in defining their own ADIZs. For example, unlike most (but not all) countries with ADIZs, China has stated it will apply its ADIZ regulations not only to aircraft intending to enter its sovereign airspace but also to foreign aircraft transiting or operating in the ADIZ that do not intend to enter its sovereign airspace.* The U.S. government opposes this expansive interpretation of the rights of a country to regulate activity in an ADIZ.⁴⁷

Because ADIZs have no explicit basis in international law, states are not legally obligated to comply with other countries' ADIZ requirements.⁴⁸ However, "states tend to recognize them because doing so can enhance security and safety by providing clear rules and areas for the operation and possible interception of aircraft near territorial airspace," according to Michael D. Swaine, senior associate at the Asia Program at the Carnegie Endowment for International Peace.⁴⁹

*According to Mark Stokes, executive director of the Project 2049 Institute, China's Air Force Shanghai Base likely will be the principal implementing body for the ADIZ, with the PLA Air Force Third Radar Brigade and the PLA Navy Second Radar Brigade providing ground-based radar surveillance in the northern and southern sections of the ADIZ, respectively. Mark Stokes, "China's ADIZ System: Goals and Challenges," *Thinking Taiwan*, April 24, 2014. <http://thinking-taiwan.com/chinas-adiz/>.

Figure 2: China's ADIZ in the East China Sea



Source: Xinhua (English edition), "Statement by the Government of the People's Republic of China on Establishing an East China Sea Air Defense Identification Zone," November 23, 2013. http://news.xinhuanet.com/english/china/2013-11/23/c_132911635.htm.

The United States, Japan,* South Korea, Australia, the European Union, and others criticized China's newly established ADIZ.†⁵⁰ According to Evan Medeiros, senior director for Asian Affairs at the U.S. National Security Council, "We [the United States] do not accept, we do not acknowledge, we do not recognize China's declared ADIZ."⁵¹ Nevertheless, in response to a question about China's ADIZ during a November 2013 press conference, the U.S. Department of State Office of the Spokesperson said, "The U.S. government generally expects that U.S. carriers operating internationally will operate consistent with NOTAMs (Notices to Airmen) issued by foreign countries. Our expectation of operations by U.S. carriers consistent with NOTAMs does not indicate U.S. government acceptance of China's requirements for operating in the newly declared ADIZ."⁵²

Beijing likely perceived several potential advantages to establishing an ADIZ:

*The United States and Japan submitted a letter to the United Nations' civil aviation regulator, the International Civil Aviation Organization (ICAO), requesting a review of whether China's ADIZ conforms to ICAO regulations on the safe passage of civilian aircraft. ICAO is expected to consider the letter but it is unclear whether it will respond. NHK Online (English edition), "Japan Asks UN Aviation Body about China's Air Zone," March 11, 2014. Open Source Center transcription. ID: JPR2014031130022028.

†The U.S. Senate also affirmed its opposition to the ADIZ in July 2014 when it passed a bipartisan resolution condemning "coercive and threatening actions or the use of force to impede freedom of operations in international airspace by military or civilian aircraft, to alter the status quo or to destabilize the Asia-Pacific region." Reaffirming the Strong Support of the United States Government for Freedom of Navigation and other Internationally Lawful Uses of Sea and Airspace in the Asia-Pacific Region, and for the Peaceful Diplomatic Resolution of Outstanding Territorial and Maritime Claims and Disputes, S. Resolution 412, 113th Cong., 2nd Sess., July 10, 2014.

- Establishing an ADIZ is a relatively low-cost, low-risk way to bolster China's territorial claim. An ADIZ requires relatively little financial investment, can be established unilaterally, is loosely defined and not explicitly addressed in international law, and provides China the opportunity to augment its growing collection of maps and legal documents that attempt to justify its maritime territorial claims.⁵³
- Establishing an ADIZ puts the onus on foreign countries and foreign aircraft operating in international airspace to decide whether to recognize and comply with China's ADIZ requirement and creates a situation in which foreign aircraft (especially passenger aircraft) are motivated to comply in an effort to mitigate safety risks. As noted above, even the United States, which does not recognize China's ADIZ, for safety reasons has indirectly advised U.S. commercial airlines to comply with it.*
- Beijing likely judges its ADIZ helps China achieve parity with Japan and to a lesser extent South Korea. Both Japan and South Korea have decades-old ADIZs in disputed airspace in the East China Sea and view entry by foreign military aircraft in their respective zones as triggering mechanisms for military responses.⁵⁴ Beijing almost certainly perceived this as advantageous for Japan and South Korea, and sought to "level the playing field" by establishing its own ADIZ.
- China likely views its ADIZ as a public relations tool. By publicizing data on "intrusions" into its ADIZ, China can paint itself as a victim rather than an aggressor.⁵⁵ Conversely, for every aircraft that complies with China's ADIZ requirements, China probably judges its body of evidence justifying its administration of airspace in the ADIZ grows.†

Since establishing its ADIZ, China appears to have dramatically increased its military and government air presence near disputed areas of the East China Sea. According to the Chinese Ministry of Defense website, China "controlled the flight activity of 800 foreign

*Japan does not recognize China's ADIZ, and the Japanese government in November 2013 requested that Japanese airlines refrain from submitting flight plans to Chinese authorities when operating in China's ADIZ. However, remarks by Japanese Foreign Minister Fumio Kishida in a December 2013 press conference suggest this request was somewhat flexible. He said, "Japan's commercial airplanes take necessary measures which facilitate the easy identification of the number of flights, location information, etc. These airplanes are equipped with two-way radio telephone apparatus, automatic answering equipment among other devices, which enables communication at any time." Tim Kelly, "Japanese Airlines to Stop Giving China Flight Plans through New Zone," Reuters, November 26, 2013. <http://www.reuters.com/article/2013/11/26/us-japan-airlines-china-idUSBRE9AP0US20131126>; Japan Ministry of Foreign Affairs, "Press Conference by Minister of Foreign Affairs Fumio Kishida," December 13, 2013. http://www.mofa.go.jp/press/kaiken/kaiken4e_000030.html.

† This approach has worked for Japan, a country that regularly documents noncompliant aircraft intrusions into its own ADIZ. According to Eric Heginbotham, a political scientist at the RAND Corporation, "Japan has used its ADIZ . . . as an effective public relations and diplomatic tool vis-à-vis China. The Japanese Ministry of Defense publishes detailed statistics on scrambles to intercept aircraft within its ADIZ, together with details of some of those events (such as aircraft tracks and photographs). In recent years, the Japanese Ministry of Defense has highlighted a steadily increasing number of intercept missions against Chinese aircraft in Japan's ADIZ." Eric Heginbotham, "The Foreign Policy Essay: China's ADIZ in the East China Sea," *Lawfare* (Blog), August 24, 2014. <http://www.lawfareblog.com/2014/08/the-foreign-policy-essay-chinas-adiz-in-the-east-china-sea/>.

war planes”* in the ADIZ in the month after the ADIZ was established, and sent surveillance, early warning, and fighter aircraft on 87 flights to patrol the ADIZ.⁵⁶ Japan Air Self-Defense Force (JASDF) fighter jet scrambles against Chinese patrols in Japan’s own ADIZ—an imperfect but useful indicator of China’s growing air presence above contested waters in the absence of reliable Chinese statistics—markedly increased after China established its ADIZ. JASDF fighter jets scrambled against China’s aircraft 138 times between October and December 2013, the highest ever number of scrambles against China and 58 more times than in the quarter preceding the establishment of the ADIZ.⁵⁷ Chinese air incursions around Japan in the six months between October 2013 and March 2014 increased 78 percent over the previous six-month period.⁵⁸

China’s ADIZ is problematic in several ways. First, the ADIZ announcement exacerbated the strained bilateral relationship between Japan and China during a period of heightened tension over the East China Sea. Second, China appears to have announced the ADIZ without prior consultation or coordination with other countries.⁵⁹ According to U.S. Secretary of Defense Chuck Hagel, this “adds to tensions, misunderstandings, and could eventually [lead to] dangerous conflict.”⁶⁰ Third, China’s expansive interpretation of a state’s right to establish and enforce an ADIZ (described above) and its willingness to establish an ADIZ above contested maritime territory demonstrate China’s inclination to contravene international norms intended to cultivate a safe environment for international flight in order to advance its own narrow interests. (This also raises questions about whether international aviation law is sufficiently developed to address sovereignty and other political disputes between countries.) Fourth, the Chinese government has not made clear how it would employ what it refers to as “defensive emergency measures” in its ADIZ.⁶¹ This lack of clarity over rules of engagement combined with existing geopolitical frictions elevates the risk of operational miscalculation or accidents among civilian and military aircraft, including those of the United States.

Two close encounters between the PLA Air Force and the Japan Self-Defense Force in China’s ADIZ in 2014 illustrate this last point. The first incident, which occurred in May, involved Chinese SU-27 fighter jets that flew within 170 feet of a Japan Maritime Self-Defense Force (JMSDF) OP-3C surveillance plane and within 100 feet of a JASDF YS-11EB electronic intelligence aircraft.⁶² A second incident occurred in June, when Chinese SU-27 fighter aircraft again flew within 100 feet of a JASDF YS-11EB and within 150 feet of a JMSDF OP-3C.⁶³

Beijing’s November 2013 announcement that it plans to establish additional ADIZs “at an appropriate time after completing preparations” led some observers to speculate China will declare an ADIZ in the South China Sea, where China has maritime disputes with Brunei, Malaysia, the Philippines, Vietnam, and Taiwan.⁶⁴ This

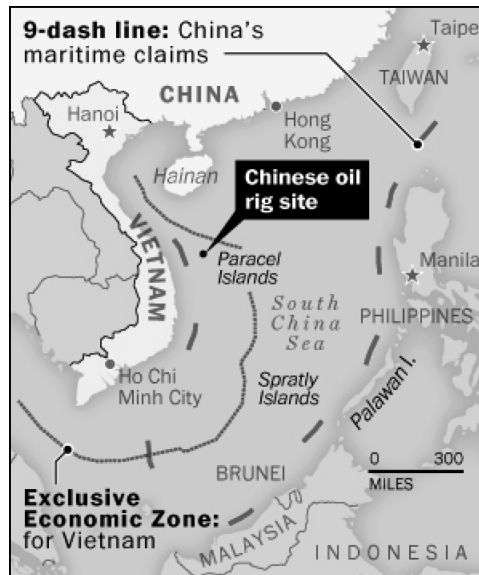
*The Chinese Ministry of Defense does not clarify what it means by “controlled,” but the term likely refers to monitoring and identification activities. Michael D. Swaine, “Chinese Views and Commentary on the East China Sea Air Defense Identification Zone (ECS ADIZ),” *China Leadership Monitor* 43 (March 2014): 22. <http://carnegieendowment.org/files/CLM43MSCarnegie013114.pdf>.

likely would yield fewer risks than in the East China Sea due to the smaller number of aircraft operating in the South China Sea. However, it would escalate tensions among the claimants and violate the Declaration on the Conduct of Parties in the South China Sea, a 2002 document in which China and the countries of the Association of Southeast Asian Nations (ASEAN) declare they will “exercise self-restraint in the conduct of activities that would complicate or escalate disputes and affect peace and stability.”⁶⁵ According to Dr. Medeiros, such a move would be viewed “as a provocative and destabilizing development that would result in changes in [the United States’] presence and military posture in the region.”⁶⁶

China Tows an Oil Rig into Disputed Waters near Vietnam: Between May and July 2014, Chinese state-owned oil company China National Petroleum Corporation towed China’s only ultradeepwater oil rig *Haiyang Shiyou 981* to locations 130–150 nautical miles (nm) off the coast of Vietnam into waters disputed by the two countries.^{* 67} This marked the first time China has deployed an oil rig to another country’s exclusive economic zone (EEZ) † without obtaining permission.⁶⁸ According to the government of Vietnam, over 100 escort vessels, including military ships, accompanied the rig. In the weeks after the rig was deployed, both China and Vietnam accused the other of harassing its vessels in the waters surrounding the rig, with Vietnam claiming China Coast Guard vessels rammed and fired water cannons at Vietnamese law enforcement vessels, injuring dozens of Vietnamese officers and sinking one Vietnamese fishing boat.⁶⁹ China subsequently sent three smaller rigs to the South China Sea, at least one of which also appears to have been towed into waters contested by Vietnam.⁷⁰

*Although China National Petroleum Corporation was operating the rig while it was stationed near Vietnam, the rig is owned by another Chinese state-owned oil company, China National Offshore Oil Corporation.

†According to the United Nations Convention on the Law of the Sea, a coastal state is entitled to an EEZ, a 200-nautical-mile zone extending from the coastline of its mainland and from the coastline of any territorial land features. Within this zone, the state enjoys “sovereign rights” for economic exploitation, (such as for oil and natural gas exploration and exploitation) but not full sovereignty. United Nations Convention on the Law of the Sea, “Article 56: Rights, Jurisdiction, and Duties of the Coastal State in the Exclusive Economic Zone.” http://www.un.org/depts/los/convention_agreements/texts/unclos/part5.htm; United Nations Convention on the Law of the Sea, “Article 121: Regime of Islands.” http://www.un.org/depts/los/convention_agreements/texts/unclos/part8.htm.

Figure 3: Location of China's Oil Rig in Vietnam's EEZ

Source: Adam Taylor, "The \$1 Billion Chinese Oil Rig that Has Vietnam in Flames," *Washington Post*, May 14, 2014. <http://www.washingtonpost.com/blogs/worldviews/wp/2014/05/14/the-1-billion-chinese-oil-rig-that-has-vietnam-in-flames/>.

Vietnam stated China's behavior "seriously infringed Vietnam's sovereignty . . . and went against the spirit and wording of the Declaration on the Conduct of Parties in the [South China Sea] and related regulations in international law."⁷¹ Thousands of Vietnamese citizens responded by looting and setting fire to factories and businesses thought to be Chinese-owned in cities across Vietnam, resulting in several casualties.*⁷² The U.S. Department of State noted that "China's decision . . . is provocative and raises tensions. This unilateral action appears to be part of a broader pattern of Chinese behavior to advance its claims over disputed territory in a manner that undermines peace and stability in the region."⁷³ Others, including several foreign ministers from ASEAN countries, issued statements explicitly or implicitly condemning China's actions.⁷⁴

After drawing ire from Vietnam and the international community for two months, China unexpectedly announced *Haiyang Shiyou 981* had concluded its activities one month ahead of schedule after successfully finding oil and gas reserves and would relocate to waters approximately 68 nm from China's island province, Hainan.⁷⁵ China may have decided to remove the rig from disputed waters early in an effort to minimize criticism of China at the approaching August ASEAN Regional Forum.⁷⁶

* Reports on the number of casualties range from four to 21. Gregory B. Poling, *Recent Trends in the South China Sea and U.S. Policy* (Washington, DC: Center for Strategic and International Studies, July 2014), p. 5. http://csis.org/files/publication/140728_Poling_TrendsSouthChinaSea_Web.pdf; Kate Hodal and Jonathan Kaiman, "At Least 21 Dead in Vietnam Anti-China Protests over Oil Rig," *Guardian*, May 15, 2014. <http://www.theguardian.com/world/2014/may/15/vietnam-anti-china-protests-oil-rig-dead-injured>.

China's decision to deploy the rig to disputed waters demonstrates the Chinese government's willingness and ability to use state-owned oil companies to achieve political and national security objectives. In fact, *Haiyang Shiyou 981's* political and strategic purposes were foretold at its 2012 unveiling, when it was referred to by officials as "mobile national territory" and a "strategic instrument."⁷⁷

China Challenges the Philippines' Control over Second Thomas Shoal: China in March 2014 sought for the first time to block access by the Philippines to its military outpost on Second Thomas Shoal, a contested land feature in the South China Sea located approximately 120 nm from the Philippine coast and more than 800 nm from the Chinese coast.⁷⁸

In what the Philippines government called "a clear and urgent threat to the rights and interests of the Philippines," China Coast Guard ships prevented Philippine civilian supply ships from replenishing Philippine marines aboard the *Sierra Madre*, a warship the Philippines intentionally grounded in 1990 on Second Thomas Shoal.⁷⁹ After being blocked by the China Coast Guard ships, the Philippines was forced to airlift supplies to its outpost.⁸⁰ Three weeks later, Chinese ships again sought to block a resupply mission to the *Sierra Madre* by sailing close to the Philippine resupply ship and blocking its path. The supply ship eventually completed the mission by sailing through waters too shallow for the Chinese ships to enter.⁸¹ Since then, the Philippine Navy has regularly air-dropped supplies to the *Sierra Madre* via parachute.⁸² It is not clear whether additional attempts have been made to resupply the ship by boat. In addition to blocking access to the *Sierra Madre*, Chinese vessels also reportedly blocked or chased away Filipino fishermen from waters near Second Thomas Shoal at least eight times between December 2013 and March 2014,⁸³ and marines aboard the *Sierra Madre* observed what appeared to be three Chinese unmanned aerial vehicles hovering above the Shoal in July and August.⁸⁴

China's efforts to deny the Philippines access to the grounded vessel represent a new step in a now-familiar Chinese strategy to use Coast Guard and other nonmilitary vessels to establish a regular or constant presence in contested waters, intimidate other claimants, and gradually change the status quo. The PLA Navy backs up these operations from a distance, typically deploying destroyers and frigates 60 to 100 nm from China Coast Guard and other non-military ships.⁸⁵ Policy makers in Beijing probably were emboldened by China's success in effectively wresting control of Scarborough Reef from the Philippines in 2012 and seek to achieve a similar outcome at Second Thomas Shoal. China likely will persist in its activities near the Shoal with the objective of increasingly imposing costs on the Philippines' continued efforts to sustain the *Sierra Madre* and maintain control over the Shoal.

The presence of a Philippine Navy ship (albeit a grounded one) and Philippine Marines stationed at Second Thomas Shoal raises the stakes for both countries, as well as the United States. Should Chinese vessels seek to use force against the *Sierra Madre* and the marines stationed there, the United States could decide to inter-

vene on the behalf of the Philippines, with which it shares a mutual defense treaty. This treaty provides, among other things, that:

*Each Party recognizes that an armed attack in the Pacific Area on either of the Parties would be dangerous to its own peace and safety and declares that it would act to meet the common dangers in accordance with its constitutional processes. . . . [A]n armed attack on either of the Parties is deemed to include an armed attack on the metropolitan territory of either of the Parties, or on the island territories under its jurisdiction in the Pacific or on its armed forces, public vessels or aircraft in the Pacific.*⁸⁶*

The treaty's application to "armed forces, public vessels, or aircraft in the Pacific" is clearly relevant to the ongoing situation at Second Thomas Shoal. However, the treaty's language is purposefully vague in its prescription for a response to "an armed attack." For example, should Chinese government or military vessels attack the *Sierra Madre*, the United States could respond in any number of ways—diplomatic, military, or otherwise—to meet its treaty commitment of "act[ing] to meet the common dangers in accordance with its constitutional processes."⁸⁷

In addition to these particularly strident new demonstrations of assertiveness, China continued to gradually assert control and grow its physical presence in disputed waters in 2014 in the following ways:

- *China Ramps Up Land Reclamation in the South China Sea:* China in 2014 made significant progress on various land reclamation projects on Johnson South Reef, Johnson North Reef, Cuateron Reef, Gaven Reef, and Fiery Cross Reef, all of which are Chinese-controlled outposts in the disputed Spratly Islands (see Figure 4, below). In addition to dredging sand to make islands where there previously were none (see Figure 5, below), China appears to be expanding and upgrading military and civilian infrastructure—including radars, satellite communication equipment, antiaircraft and naval guns, helipads, and docks—on some of the islands.⁸⁸

*President Obama reaffirmed the mutual defense treaty during an April 2014 visit to the Philippines, saying, "For more than 60 years, the United States and the Philippines have been bound by a mutual defense treaty. And this treaty means that our two nations pledge . . . our 'common determination to defend themselves against external armed attacks, so that no potential aggressor could be under the illusion that either of them stands alone.' . . . In other words, our commitment to the Philippines is ironclad and the United States will keep that commitment, because allies never stand alone." Jim Garamore, "From Bataan to Typhoon, Obama Praises U.S.-Philippine Alliance," American Forces Press Service, April 29, 2014. <http://www.defense.gov/news/newsarticle.aspx?id=122141>.

Figure 4: China's Major Land Reclamation Projects in the South China Sea

Locations are not exact. Map adapted from James Hardy et al., "China Goes All Out with Major Island Building Project in Spratlys," *IHS Jane's* 360, June 20, 2014. <http://www.janes.com/article/39716/china-goes-all-out-with-major-island-building-project-in-spratlys>.

These land reclamation projects appear intended to bolster the legal standing of China's South China Sea claims ahead of an International Tribunal on the Law of the Sea ruling requested by the Philippines.⁸⁹ The Philippines has asked the tribunal to declare whether certain land features in the South China Sea are islands (which can generate full EEZs) or smaller land features (which can only generate territorial seas out to 12 nm).^{*} China may perceive that if it can demonstrate that the remote South China Sea outposts it occupies are true islands, rather than mere rocks or reefs, it will strengthen the legal and practical justification for its vast territorial claims (see Figure 5, below).[†]

^{*} According to the United Nations Convention on the Law of the Sea, "an island is a naturally formed area of land, surrounded by water, which is above water at high tide" and which may generate an EEZ. However, "rocks which cannot sustain human habitation or economic life of their own" cannot generate territory beyond territorial seas out to 12 nm. United Nations Convention on the Law of the Sea, "Part 8: Regime of Islands." <http://www.un.org/Depts/los/convention/agreements/texts/unclo/clos/indx.htm>.

[†] According to the United Nations Convention on the Law of the Sea, artificial islands are not considered true islands, and thus cannot generate their own territorial seas or EEZs. United

Moreover, these infrastructure improvements are enhancing China's ability to sustain its naval and maritime law enforcement presence in the South China Sea. This is particularly the case at Fiery Cross Reef, where a five-square mile project has been under construction intermittently since 1988. According to IHS Jane's, Chinese facilities there serve as "base" for conducting land reclamation projects elsewhere in the Spratly Islands and host communications equipment, a greenhouse, a wharf, a helipad, and coastal artillery.⁹⁰ Andrew S. Erickson, associate professor at the U.S. Naval War College, and Austin M. Strange, PhD student at Harvard University, suggest Fiery Cross Reef could eventually sustain a PLA Navy command and control center twice the size of Diego Garcia, a U.S. naval base in the Indian Ocean.⁹¹

China also appears to be constructing an airstrip at Johnson South Reef. The Philippines Department of Foreign Affairs in May 2014 released a series of photographs demonstrating the progress of Chinese land reclamation activities there (see Figure 5, below).

Although Vietnam, the Philippines, the United States, and other countries have criticized China's land reclamation projects, a Chinese Ministry of Defense spokesperson defended them, saying, "China's activities on relevant islands and reefs of the [Spratly] Islands fall entirely within China's sovereignty and are totally justifiable."⁹²

Nations Convention on the Law of the Sea, "Part 5: Exclusive Economic Zone." http://www.un.org/depts/los/convention_agreements/texts/unclos/part5.htm.

Figure 5: China's Land Reclamation Activities at Johnson South Reef, March 2012–March 2014



Photographs of China's land reclamation activities on Johnson South Reef, from top to bottom, taken in March 2012, February 2013, February 2014, and March 2014. Image adapted from Pia Lee-Brago, "Photos Reveal Stages of China Reclamation at Reef," *Philippine Star*, May 16, 2014. <http://www.philstar.com/headlines/2014/05/16/1323659/photos-reveal-stages-china-reclamation-reef>.

- *China Asserts Greater Control over Fishing Activities in the South China Sea:* In January 2014, the government of China's island province, Hainan, enacted new measures requiring all foreign ships to obtain approval from the Chinese government before entering "maritime areas" within the 770,000 square nm of Hainan's claimed jurisdiction.⁹³ In March, the Party Secretary for Hainan Province commented that Chinese authorities enforce the regulations "if not every day then at least once a week," noting that "the majority [of perceived incursions by foreign fishing vessels in China's claimed waters] are dealt with by negotiating and persuasion."⁹⁴ China does not regularly publicize arrests of foreign fishermen, but media reports

suggest Chinese authorities frequently arrest or otherwise harass foreign fishermen operating in Hainan's claimed waters.⁹⁵ It is unclear whether the new regulations have led to an increase from previous years in arrests of foreign fishermen in Hainan's claimed waters.

Although the new measures do not appear to set forth new policy, subtle linguistic differences from previous iterations of the regulations suggest Hainan is taking a more pronounced stance regarding perceived foreign infringements on China's "maritime rights and interests."⁹⁶ Whether Hainan's new regulations are the result of directives from the central government is unclear, but given the regulations' politically sensitive nature and implications for China's relationships with its neighbors, Beijing likely had a role in shaping the new measures.

Figure 6: Hainan Province's Claimed Maritime Jurisdiction



The shaded areas of the map represent Hainan Province's claimed maritime jurisdiction. Locations are not exact. Map adapted from Open Source Center, "China: Hainan Province Requires Foreign Fishing Vessels to Gain Permission before Entering Waters," December 20, 2013. ID: CHO2013122036238672.

- *China Continues Air and Sea Patrols around the Senkaku Islands in the East China Sea:* China continues to strengthen its military and law enforcement presence near the Senkaku Is-

lands with increased patrols by PLA Navy surface ships and PLA Air Force fighters in the East China Sea, the continuation (albeit at a lower rate than in 2013) of patrols by China's maritime law enforcement ships in disputed areas,⁹⁷ and the beginning of long-range air strike training in the East China Sea in late 2013.⁹⁸ China uses these highly visible operations to assert its territorial claims, deter Japan from challenging its claims, provide the PLA and maritime law enforcement agencies with valuable operational experience in the East China Sea, and hone China's military options in the event its strategy to consolidate its East China Sea claims through coercion fails.

Developments in Cross-Strait Relations

Relations between China and Taiwan remained stable in 2014 as the two sides tried to sustain progress on economic and other cooperation agreements. Despite the cross-Strait rapprochement, China's military modernization continues to focus on improving its capabilities for Taiwan conflict scenarios that include U.S. intervention.⁹⁹ This modernization program is designed to hedge against a failure of China's cross-Strait diplomatic strategy; deter Taiwan from taking steps toward *de jure* independence; signal to the United States that China is willing to use force against Taiwan if necessary; and enhance China's ability to deter, delay, or deny any U.S. intervention in a cross-Strait conflict. Meanwhile, Taiwan continues to struggle to maintain a credible deterrent capability.¹⁰⁰ For a thorough discussion of economic, political, diplomatic, and military developments in the cross-Strait and U.S.-Taiwan relationships, see Chapter 3, Section 3, "Taiwan."

PLA Exercises and Training

PLA exercises accomplish multiple objectives, which include training in core warfighting competencies, integrating new weapon systems and tactics, developing and refining integrated joint operations command structures and concepts, evaluating crew and platform proficiencies, and demonstrating to other countries that China can project power in Asia and beyond. From late 2013 to 2014, high-profile exercises and patrols included the following:

Mission Action 2013

From September to October 2013, China conducted a major exercise known as Mission Action 2013, which involved about 50,000 troops from China's ground, naval, and air forces as well as extensive civilian assets. The exercise is the latest in the Mission Action series, which began in 2010 and is designed to demonstrate and test the PLA's ability to mobilize large numbers of troops across large distances for power projection in a high-intensity, long-duration campaign.¹⁰¹

Based on the types of activities conducted, official Chinese media reporting, and the PLA units involved, Mission Action 2013 likely simulated a Taiwan invasion scenario. The exercise had three phases: the first and third phases concluded with multi-service amphibious landing operations and the second phase culminated in a long-range air assault. Mission Action 2013 was led by elements

from the Nanjing and Guangzhou military regions, which would be heavily involved in any potential military course of action against Taiwan, and the PLA Air Force. The exercise attests to more robust preparations for potential wartime contingencies.¹⁰²

Highlights of the exercise include the following: the use of advanced information systems, such as the “Information Command Platform,” to provide a near-real-time picture of battlefield conditions and allow commanders to issue orders rapidly to multiple units at the same time while on the move; long-range maneuvers by troops via road, rail, military and civilian air, and navy and ground force ships; two joint amphibious landing drills that were supported by civilian transport ships; and a joint long-range air assault drill with almost 100 aircraft.¹⁰³

Maneuver-5 Exercise

From October 18 to November 1, 2013, the PLA Navy held a sophisticated, large-scale training exercise that spanned China’s near seas and distant seas.* The PLA Navy’s largest blue water exercise to date, it marked the first time the PLA Navy has conducted coordinated combat drills in the Western Pacific with elements from all three of its fleets: the North Sea Fleet, East Sea Fleet, and South Sea Fleet.[†]¹⁰⁴

Operational highlights of the exercise include the following:

- *Interoperability between Fleets:* Maneuver-5 demonstrated the PLA Navy’s increasing ability to coordinate air, sea, and underwater elements from all three PLA Navy fleets.¹⁰⁵ During the exercise, the PLA Navy used China’s regional satellite navigation system, Beidou-2, to facilitate communication and provide guidance and tracking data to participating units.¹⁰⁶ In one instance, a shipboard helicopter provided over-the-horizon targeting information to a destroyer to enable simulated long-range strikes against a target ship.¹⁰⁷
- *Readiness in Realistic Combat Conditions:* Throughout the deployment, the PLA Navy used “ad hoc” scenarios to train shipboard commanders to react to events as they occurred. These scenarios were designed to enhance tactical commanders’ flexibility and responsiveness to changing conditions at sea.¹⁰⁸ PLA Navy Commander Admiral Wu Shengli said the exercise was designed to “[be] combat-realistic to the maximum extent, set combat-realistic scenarios to the maximum extent, [and test] the maximum performance effects of weaponry and equipment.”¹⁰⁹ Traditionally, PLA Navy tactical commanders during exercises have relied on a predetermined exercise script, strict rules of engagement, or explicit orders from higher echelons to guide their actions.¹¹⁰

* China typically defines its “near seas” as waters within the Yellow Sea, East China Sea, and South China Sea. China typically describes its “distant seas” as waters outside of its near seas.

† The PLA Navy’s three fleets are its principal operational and administrative command entities. The North Sea Fleet, headquartered in Qingdao, is responsible for the Yellow Sea and the Bohai. The East Sea Fleet, headquartered in Ningbo, is responsible for the East China Sea, including the Taiwan Strait. The South Sea Fleet, headquartered in Zhanjiang, is responsible for the South China Sea, including the contested Spratly and Paracel Islands.

- *Ability to Operate in Distant Seas and “Break Through” the First Island Chain:* The Maneuver-5 exercise was the eighth PLA Navy long-distance surface deployment of 2013 and showcased the PLA Navy’s growing ability to operate in distant seas.¹¹¹ Chinese media claimed the Maneuver-5 exercise marked “the first time the three PLA [Navy] fleets simultaneously [passed] through the first island chain* to carry out a joint exercise in the Western Pacific.”¹¹² PLA Senior Colonel Du Wenlong said, “The [PLA Navy] has cut up the whole island chain into multiple sections so that the so-called island chains are no longer existent.”¹¹³ Beijing almost certainly views its familiarity with and ability to operate in the Western Pacific as key to interdicting U.S. forces in a potential conflict.

PLA Navy Conducts First-Ever “Combat Readiness Patrol” in the Indian Ocean

In January and February 2014, a three-ship Chinese surface action group carried out a sophisticated training exercise spanning the South China Sea, eastern Indian Ocean, and Philippine Sea. The deployment marked the first time the PLA Navy has conducted what official Chinese sources refer to as a “combat readiness patrol,” or “blue-water training,” in the Indian Ocean. Although the PLA Navy has made forays into the region since at least 1985,¹¹⁴ its presence there has increased considerably over the last five years.¹¹⁵ The PLA Navy used the 23-day deployment to improve operational proficiencies for antisubmarine warfare, air defense, electronic warfare, and expeditionary logistics; train to seize disputed islands and reefs in the South China Sea; enhance its ability to conduct integrated and multi-disciplinary operations; and demonstrate to the Indo-Pacific region that China’s combat reach now extends to the eastern Indian Ocean.¹¹⁶

The surface action group consisted of the *Changbaishan* YUZHAO-class amphibious transport dock (LPD), the *Wuhan* LUYANG I-class guided-missile destroyer (DDG), and the *Haikou* LUYANG II-class DDG. At approximately 20,000 tons, the YUZHAO LPD is China’s largest indigenously built ship class.† During the deployment, the *Changbaishan* embarked China’s only

*The first island chain refers to a line of islands running from Japan, the Senkaku Islands, Taiwan, and the west coast of Borneo to Vietnam. The second island chain refers to a line of islands running from the Kurile Islands through Japan, the Bonin Islands, the Mariana Islands, the Caroline Islands, and Indonesia. PLA strategists and academics have long asserted the United States relies primarily on the “first island chain” and the “second island chain” to strategically “encircle” or “contain” China and prevent the PLA Navy from operating freely in the Western Pacific. Hai Tao, “The Chinese Navy Has a Long Way to Go to Get to the Far Seas,” *International Herald Leader*, January 6, 2012. Open Source Center translation. ID: CPP20120109671003.

†The YUZHAO LPD can carry up to four YUYI hovercraft, 20 amphibious armored vehicles, 800 marines, and at least four helicopters. Given the ship’s size, range, and ability to support over-the-horizon operations using helicopters and hovercraft, it is well suited for amphibious assaults against islands and reefs in the South China Sea and Taiwan-controlled islands in the Taiwan Strait, as well as for search and rescue, humanitarian assistance and disaster relief, and counterpiracy operations. See Chapter 2, Section 2, “China’s Military Modernization,” for more information on China’s YUZHAO specifically and China’s amphibious capabilities generally. U.S.-China Economic and Security Review Commission, *Hearing on PLA Modernization and Its Implications for the United States*, written testimony of Jesse Karotkin, January 10, 2014; IHS Aerospace, Defense, and Security, “Analysis: China’s Expanding Amphibious Capabilities,” October 2013; and Craig Murray et al., *China’s Naval Modernization and Implications for the United States* (U.S.-China Economic and Security Review Commission, August 26, 2013).

operational YUYI-class hovercraft, three helicopters, and one company of marines.¹¹⁷

Operational highlights of the exercise include the following:

- During the deployment, the PLA Navy conducted its first known transit through the Sunda, Lombok, and Makassar straits. These are international straits with regular flows of maritime shipping, albeit far less than the more economical route via the Straits of Malacca and Singapore. As with the Maneuver-5 exercise, these transits appear to be part of a concerted effort by the PLA Navy since 2013 to demonstrate its ability to “break through” the first island chain to operate in China’s “distant seas.”¹¹⁸
- Soon after the surface action group left port, it reportedly rendezvoused with multiple PLA Navy submarines for “submarine-vessel joint ‘enemy’ blockade breakout drills” in the South China Sea. It is unlikely the submarines accompanied the surface action group for the duration of the deployment. Official Chinese media coverage indicates increasing submarine involvement in PLA Navy surface deployments since at least 2010, signaling China is seeking to improve its ability to coordinate surface and submarine units at sea.¹¹⁹
- On January 22, the surface action group conducted amphibious assault training for small-island and reef seizures in the Paracel Islands in the South China Sea, several of which are contested by China, Taiwan, and Vietnam. The training included landing marines by shipborne helicopters and hovercraft. The PLA Navy’s use of YUZHAO LPDs in amphibious assault training since 2008 and the ship’s range and ability to support over-the-horizon assaults using helicopters and hovercraft suggest it would play a significant role in seizures of islands and reefs in the South and East China Seas or in an amphibious assault against Taiwan.¹²⁰

Separately, from December 2013 to February 2014, a SHANG nuclear-attack submarine conducted China’s first submarine combat readiness patrol to the Indian Ocean.¹²¹ China likely also used the deployment to test the submarine and its crew’s ability to operate for long durations at extended distances from China as well as to train for potential crises and wartime operations in the Indian Ocean. China informed Indian military officials that the submarine would be supporting the PLA Navy’s ongoing counterpiracy operations in the Gulf of Aden.¹²² In September 2014, a PLA Navy submarine made a port call in Colombo, Sri Lanka, which coincided with President Xi’s visit to the country.¹²³

PLA Conducts Series of Large-Scale Exercises from May to September 2014

From late May to late September 2014, the PLA held a series of large-scale exercises that involved the PLA ground, air, and naval

forces and all seven military regions.* A Chinese state-run newspaper said the exercises were “of a rare breadth and scale” and explained they were part of the PLA’s efforts to “hone its craft in simulating battles to prepare for potential challenges in a more convoluted international situation.”¹²⁴

- From late May to early September, the PLA held a cross-region mobility exercise, known as Stride-2014. The exercise featured seven separate parts, each led by a combined arms brigade from a different military region. Stride-2014 tested the participating forces’ ability to rapidly maneuver over long distances under simulated wartime conditions. Modes of travel included road, rail, and air.¹²⁵
- Beginning in late June, the PLA conducted a 100-day, two-part artillery exercise, known as Firepower-2014. Exercise participants included six artillery units from the Shenyang, Beijing, Jinan, and Guangzhou military regions; several PLA universities, including the Nanjing Artillery Academy and the Air Defense Forces Academy; multiple training bases; about 20,000 personnel from five military regions; and 1,000 pieces of main battle equipment.¹²⁶
- From late July to early August, the PLA Navy simultaneously conducted major exercises in at least three distinct maritime areas: the Gulf of Tonkin, which borders both China and Vietnam; the East China Sea; and the Yellow Sea. Although a Chinese Ministry of Defense spokesperson characterized the exercises as routine annual training, several official Chinese media articles cited military experts claiming the scale of the naval activity was unprecedented.¹²⁷

Due to PLA requirements for Chinese airspace during these exercises, Beijing ordered 12 airports in eastern China, including two of the country’s busiest airports in Shanghai, to reduce flights by 25 percent from July 20 to August 15, resulting in the cancellation of hundreds of flights.¹²⁸

PLA Participation in Major Joint and Multinational Activities

The PLA participated in more exercises and drills with foreign militaries in 2014 than in any previous year since 2005, according to the U.S. Department of Defense and other sources.¹²⁹ Growing PLA engagement with worldwide militaries complements and augments Beijing’s broader foreign policy efforts, bolsters China’s international image, helps the PLA identify and address specific shortfalls in PLA operational capabilities by observing and absorbing best practices from foreign militaries, and in some cases allows the PLA to field test equipment and obtain hands-on experience operating in unfamiliar environments. As the PLA modernizes and

* China is geographically organized into seven military regions, whose headquarters serve as the administrative centers for the army, navy, and air force units contained within their boundaries. They are, in protocol order: Shenyang, Beijing, Lanzhou, Jinan, Nanjing, Guangzhou, and Chengdu.

becomes more capable and confident, it likely will increase its engagement with foreign militaries.

RIMPAC

Most significant among the PLA's international engagements in 2014 was its participation for the first time in the U.S.-led multinational Rim of the Pacific (RIMPAC) naval exercise. The biennial exercise is the largest maritime exercise in the world, and this year included 49 surface ships, 6 submarines, more than 200 aircraft, and more than 25,000 personnel from 22 countries.¹³⁰ China contributed the second-largest contingent to the exercise (behind the United States).¹³¹ The PLA Navy's decision to send a LUYANG II-class DDG, a JIANGKAI II-class missile frigate, and the *Peace Ark* hospital ship to the exercise* showcases China's desire to use its modern, domestically produced vessels for high-profile missions and international engagements to highlight the PLA Navy's modernization.¹³²

China's participation in RIMPAC began with a ten-day group sail from Guam to Hawaii with naval ships from the United States, Singapore, and Brunei. During the group sail, contingents from the four countries participated in "a number of exercises involving personnel exchanges, weapons firing, ship handling and maneuvering drills and communications exercises," according to Captain Patrick Kelly, commanding officer of the U.S. task force.¹³³ According to media sources, once the RIMPAC participants arrived in the waters off Hawaii, the PLA Navy participated in the following bilateral and multilateral activities with other navies: live-fire drills; † drills for maritime replenishment, small boat assault, humanitarian assistance and disaster relief, tracking and surveillance of merchant vessels, multi-vessel interception and boarding, antipiracy, and maritime search and rescue;¹³⁴ military medical exchanges; and other bilateral and multilateral military and cultural activities.¹³⁵

According to the Chinese contingent's drill director, the PLA Navy had three goals for the exercise: to advance U.S.-China "new-type" military relations, to deepen cooperation and communication with participating navies, and to demonstrate the PLA's intent to protect and promote regional and global peace, security, and stability.¹³⁶

* Participation by the PLA Navy's *Peace Ark*, along with U.S. Navy hospital ship *Mercy*, marks the first participation of hospital ships in RIMPAC. The *Peace Ark* participated in medical subject matter expert exchanges, simulated disaster relief operations at sea, and hosted a military medical symposium attended by around 60 medical officials from participating countries. Hang Shaohu and Chen Weihua, "Visitors Tour Chinese Ships in Hawaii," *China Daily*, July 7, 2014. http://usa.chinadaily.com.cn/epaper/2014-07/07/content_17652596.htm.

† Official U.S. Department of Defense sources have characterized this activity as a "simple gunnery exercise" involving shooting large-caliber guns at targets. Responding to concerns about whether the gunnery exercise violates U.S. law prohibiting engagement in military-to-military activities with China that could "create a national security risk due to inappropriate exposure," (National Defense Authorization Act of 2000), Pentagon officials said, "Through many months of coordination, our expert planners and lawyers have ensured that China's participation in RIMPAC is in strict compliance with U.S. law" and concluded that "there's no violation of U.S. law, so no reason not to do it." *PLA Daily*, "The 'RIMPAC 2014' Exercise Carries Out Main Gun Firing Drills," July 15, 2014. Open Source Center translation. ID: CHR2014071525159222; Zhang Yunbi, "Timeline of China's RIMPAC 2014 Highlights," *China Daily*, August 4, 2014. http://www.chinadaily.com.cn/china/2014-08/04/content_18244900.htm; and Jeremy Page, "In Pacific Drills, Navies Adjust to New Arrival: China," *Wall Street Journal*, July 17, 2014. <http://online.wsj.com/articles/in-rimpac-naval-drills-off-hawaii-militaries-adjust-to-new-arrival-china-1405527835>.

China sent an uninvited intelligence collection ship to monitor and gather information on the exercise.* Although Admiral Samuel J. Locklear III, commander of U.S. Pacific Command, said deploying the intelligence ship inside the United States' EEZ "is within the law and it's [China's] right to do it," he admitted China's "introduction of the [intelligence ship] [was] ... a little odd."†¹³⁷ Indeed, the intelligence collection ship's presence was inappropriate and undermined the spirit of cooperation and transparency that RIMPAC seeks to cultivate.

China's deployment of the intelligence ship also runs counter to Beijing's insistence that foreign militaries provide notification and receive approval prior to operating in China's claimed EEZ. Beijing's naval presence in foreign EEZs indicates China's willingness to operate its military assets in a manner it currently protests. Beijing is unlikely to change its policy to one more aligned with that of the United States, and rather will continue to assert its authority to regulate U.S. military activities in its EEZ even as it increases its own military operations in foreign EEZs and disputed waters in the South and East China Seas.¹³⁸

Aside from its troubling decision to send an intelligence collection ship to the exercises, China's participation in RIMPAC enabled limited but meaningful progress in China's participation in regional security and U.S.-China military-to-military relations.¹³⁹ Michael O'Hanlon, senior fellow at the Brookings Institution, explained that "in isolation [China's participation] doesn't do a great deal of good of course, but it provides the basis for more [cooperation]." ¹⁴⁰ All RIMPAC participants are routinely invited back, so China likely will participate again in 2016.¹⁴¹

Humanitarian Assistance and Disaster Relief

The PLA contributed to major humanitarian assistance and disaster relief (HA/DR) efforts in the Asia Pacific twice in 2014: in response to Typhoon Haiyan in the Philippines and in the search for missing airliner Malaysia Airlines Flight 370. The PLA achieved a number of "firsts" with these two operations. As the PLA's HA/DR capabilities mature and as China seeks to portray itself as an effective leader in East Asia, China almost certainly will seek to play a more prominent role in responding to humanitarian crises and disasters in the region.‡

China provided limited HA/DR contributions to the Philippines in the aftermath of Typhoon Haiyan, which hit the Philippines in November 2013. China's *Peace Ark* arrived in the Philippines two weeks after the typhoon hit, marking the first time China sent a

* China had deployed a similar ship to observe RIMPAC in 2012, but China did not participate in that iteration of the exercise. Kimberly Hsu and Craig Murray, *China's Expanding Military Operations in Foreign Exclusive Economic Zones* (U.S.-China Economic and Security Review Commission, June 19, 2013), p. 1. http://origin.www.uscc.gov/sites/default/files/Research/Staff%20Backgrounder_China%20in%20Foreign%20EEZs.pdf.

† One civilian expert compared China's behavior to "inviting a friend over for dinner and then having their buddy break in your back door to rob you." Andrew S. Erickson and Emily de La Bruyere, "China's RIMPAC Maritime-Surveillance Gambit," *National Interest*, July 29, 2014. <http://nationalinterest.org/feature/china%E2%80%99s-rimpac-maritime-surveillance-gambit-10970>.

‡ During the RIMPAC exercises, the commander of China's *Peace Ark* hospital ship told reporters, "The Chinese Navy will take part in more ... international humanitarian rescues." Rosalind Mathieson, "China's Navy Offers Messages in Soft-Power Display in Hawaii," *Bloomberg*, July 28, 2014. <http://www.bloomberg.com/news/2014-07-27/china-s-navy-shows-off-massage-techniques-in-soft-power-display.html>.

naval vessel overseas for a medical HA/DR mission.¹⁴² The *Peace Ark*'s helicopter transferred sick and injured people to and from the ship for medical treatment, and Chinese media reported the *Peace Ark*'s naval doctors treated 2,208 patients over the 16-day long mission.*¹⁴³

Following the disappearance of Malaysia Airlines Flight 370 in March 2014, China deployed a large number of assets to conduct search and rescue operations. These assets included two IL-76 strategic airlifters, one Y-8 transport aircraft, two modern guided-missile frigates, two large amphibious ships, maritime law enforcement ships, and four helicopters.¹⁴⁴ China also tasked 21 satellites to assist in the operation.¹⁴⁵ The majority of passengers aboard the missing flight were Chinese citizens, and China's rapid response to the disaster likely reflected growing expectations in China for the PLA to protect Chinese citizens and commercial interests overseas.¹⁴⁶

During the search for the plane, China participated in several multinational and bilateral operations, providing China's untested HA/DR force with examples of best practices in the field. For example, the PLA Air Force detachment contributed to multinational air search operations under the coordination of the Royal Australian Air Force, with PLA Air Force aviators working with Australia's Headquarters Joint Operations Command to locate debris thought to be from the missing plane.¹⁴⁷ PLA Navy ships also coordinated their search efforts with those of other countries and for the first time cooperated at the tactical level with the Royal Australian Navy by embarking an officer on an Australian naval ship.¹⁴⁸ Additionally, a PLA Navy DDG conducted information and personnel transfers with an Australian naval ship.¹⁴⁹

Removal of Syrian Chemical Weapons

From January to June 2014, two PLA Navy JIANGKAI-II guided-missile frigates participated in 20 escort missions of the United Nations Organization for the Prohibition of Chemical Weapons to remove chemical weapons from Syria to international waters for neutralization. The escorts were the first time China provided marine transport support for chemical weapons destruction and were undertaken jointly with navies from Russia, Denmark, and Norway.¹⁵⁰ China also reportedly provided ten ambulances and surveillance cameras to assist operations to bring Syria's chemical weapons to port.¹⁵¹ The PLA Navy was well placed to join in the escort mission due to its experience conducting naval escorts in the Gulf

*The *Peace Ark*'s accomplishments were overshadowed somewhat by political tensions related to China's maritime territorial dispute with the Philippines. International media criticized Beijing's initial \$100,000 donation to the relief efforts as too modest, with some observers suggesting China's limited response was a reflection of increased political tensions between the two countries. Perhaps in response to this criticism, China later pledged an additional \$1.64 million in aid and supplies. Brian Spegele, "China Offers Modest Aid to Philippines after Typhoon Haiyan," *China Real Time Report* (Blog), November 12, 2013. <http://blogs.wsj.com/chinarealtime/2013/11/12/china-offers-modest-aid-to-philippines-after-typhoon-haiyan/>; Jane Perlez, "China Offers Relatively Modest Aid for Typhoon Victims," *Sinosphere* (New York Times blog), November 11, 2013. <http://sinosphere.blogs.nytimes.com/2013/11/11/china-offers-relatively-modest-aid-for-typhoon-victims/>; Hannah Beech, "China to Philippines: Here, Have a Measly \$100,000 in Aid," *Time*, November 13, 2013. <http://world.time.com/2013/11/13/china-to-philippines-here-have-a-measly-100000-in-aid/>; and "Typhoon Haiyan: China Gives Less Aid to Philippines than Ikea," *Guardian*, November 14, 2013. <http://www.theguardian.com/world/2013/nov/14/typhoon-haiyan-china-aid-philippines-ikea>.

of Aden since 2009. By virtue of this experience, PLA Navy ships involved in counterpiracy activities in the Gulf of Aden also have become familiar with the Mediterranean Sea through port calls and other activities.¹⁵²

From a political standpoint, China's role in the chemical weapons removal likely was motivated by Beijing's desire to demonstrate China's will and ability to play a positive role in addressing global security problems, particularly after being criticized by the international community in recent years for its refusal to condemn the Syrian government in the United Nations Security Council.¹⁵³

Counterpiracy Operations

Since January 2009, China has sustained a naval task group in the Gulf of Aden to conduct counterpiracy operations. This represents the PLA's largest overseas presence. As of August 2014, the PLA Navy had deployed more than 10,000 personnel in 18 successive two- or three-ship task groups over nearly six years. Chinese official media sources state the PLA Navy has protected more than 5,670 commercial ships from China and over 60 other countries over the course of more than 540 escorts. In the past year, PLA Navy special forces also conducted on-board escort missions for 18 ships and rescued one commercial vessel from a pirate attack.¹⁵⁴ In September 2014, the PLA Navy deployed a submarine to the Gulf of Aden to support its counterpiracy operations there.¹⁵⁵

In addition to its ongoing counterpiracy operations in the Gulf of Aden,* the PLA Navy has conducted antipiracy drills with several other countries in 2014. In March, the 16th escort task force to the Gulf of Aden conducted joint antipiracy drills—including taskforce maneuvering, maritime replenishment, light signaling,† and anti-ship firing—with the European Union Combined Task Force 465.¹⁵⁶ In May, as part of a joint China-Russia exercise in the East China Sea, the PLA Navy and Russian Navy simulated antipiracy rescue operations.¹⁵⁷ In June, before sailing back to China following the completion of its escort responsibilities in the Gulf of Aden, the PLA Navy's 16th escort task force visited eight African countries and for the first time conducted antipiracy drills with the Cameroon Navy in the Gulf of Guinea.¹⁵⁸ The PLA Navy and the U.S. Navy are scheduled to hold the third in a series of annual joint counterpiracy exercises in 2014.¹⁵⁹ As this Report went to print, this exercise had not occurred.

14th Western Pacific Naval Symposium

China hosted the Western Pacific Naval Symposium for the first time in April 2014.¹⁶⁰ The Symposium was established in 1988 and now includes 21 members and three observers.‡ According to its

*For an overview of China's counterpiracy operations in the Gulf of Aden since 2009, see U.S.-China Economic and Security Review Commission, *2013 Annual Report to Congress*, November 2013, pp. 215 and 231; U.S.-China Economic and Security Review Commission, *2012 Annual Report to Congress*, November 2012, pp. 136, 143, 301, and 318; U.S.-China Economic and Security Review Commission, *2011 Annual Report to Congress*, November 2011, pp. 162–163; and U.S.-China Economic and Security Review Commission, *2009 Annual Report to Congress*, November 2009, pp. 118–125.

†Light signaling refers to visual communication between ships using patterns of flashing lights.

‡The members of the Western Pacific Naval Symposium are Australia, Brunei, Cambodia, Canada, Chile, China, France, Indonesia, Japan, Malaysia, New Zealand, Papua New Guinea,

charter, the Symposium aims to “increase cooperation and the ability to operate together, as well as to build trust and confidence between Navies by providing a framework to enable the discussion of maritime issues of mutual interest, the exchange of information, the practice and demonstration of capabilities, and the exchange of personnel.”¹⁶¹

The most notable accomplishment of the two-day event, which was held in Qingdao, Shandong Province, was the unanimous approval of a Code for Unplanned Encounters at Sea (CUES). According to the U.S. Navy, CUES, which China had opposed at previous iterations of the Symposium,^{*} is a voluntary and legally non-binding “agreement upon which the participating nations have a standardized protocol of safety procedures, basic communications and basic maneuvering instructions to follow for naval ships and aircraft during unplanned encounters at sea.”¹⁶² If observed consistently, CUES could significantly reduce the risk of miscommunication, miscalculation, and accidents at sea. Regional navies warmly welcomed CUES’ approval. U.S. Chief of Naval Operations Admiral Jonathan Greenert remarked, “We’ve agreed to increase the standards that we will set at sea. We’ve agreed to establish proficiency in communications. We’ve agreed to establish common behavior at sea. We’ve agreed to prevent misunderstanding and miscalculations,” and Admiral Wu Shengli praised the agreement as a “milestone document.”¹⁶³

The Western Pacific Naval Symposium was not untouched by regional tensions, however. China declined to invite Japan to an international fleet review that it had planned to host in Qingdao following the Symposium. Although China maintained it was holding the review to celebrate the anniversary of the establishment of the PLA Navy, U.S. officials said China had invited the U.S. Navy to participate in the review as part of the Symposium, not as a separate event. In response to China’s snub of Japan, the United States decided not to send its own ships to the fleet review, and instead participated as an observer. China ultimately cancelled its international fleet review, ostensibly due to the “special circumstances and atmosphere” of the international search for missing Malaysia Airlines Flight 370.¹⁶⁴

Implications for the United States

With a few exceptions, the U.S.-China security relationship deteriorated in 2014. The rhetoric of a “new type of major-country relationship,” embraced by both countries in 2013, has not had a warming effect on bilateral ties and mutual suspicion and distrust persist.¹⁶⁵ This can be attributed in large part to the two countries’ competing visions for the future of Asia: whereas the United States seeks a stable and prosperous region in which it has a primary role in perpetuating the rules-based liberal order, China seeks to dis-

Peru, Philippines, South Korea, Russia, Singapore, Thailand, Tonga, the United States, and Vietnam. Bangladesh, India, and Mexico are observers.

^{*}At the 2012 Western Pacific Naval Symposium, for example, China opposed endorsing CUES because it was concerned the word “code” implied that the agreement was legally binding. Megha Rajagopalan, “China won’t swallow ‘bitter pill’ of ceding sovereignty rights: military official,” Reuters, April 23, 2014. <http://www.reuters.com/article/2014/04/23/us-china-military-idUSBREA3M0YY20140423>.

place U.S. primacy in East Asia and the Western Pacific and promote a new regional security architecture led by China and in which the United States plays a more limited role. (For an in-depth discussion of China's vision for Asian security, see Chapter 3, Section 1, "China and Asia's Evolving Security Architecture.")

In addition to longstanding policy differences between the United States and China over fundamental security issues (such as Taiwan), the relationship was strained most obviously in 2014 by China's destabilizing, unilateral, and coercive actions in the South and East China Seas and China's willingness to engage the United States in confrontational and dangerous air and maritime encounters.

As noted previously, China has pursued a more assertive approach to its longstanding territorial disputes in the South and East China Seas since 2009. China's efforts to justify and consolidate its claims directly undermine the values guiding U.S. policy in Asia: peace, stability, and the rule of law. Washington has a particular interest in the peaceful resolution of China's disputes with Japan and the Philippines, both of which are U.S. treaty allies.

U.S. and Chinese officials frequently exchanged barbs over the disputes in 2014, usually following a pattern in which U.S. officials would express concern and Chinese officials would respond by asserting Washington should stay out of "regional matters." In March, for example, the U.S. Department of State referred to China Coast Guard vessels' efforts to intimidate Philippine ships in the South China Sea as a "provocation" and the Chinese Foreign Ministry responded by saying "The U.S. comments ignored the facts, ran against its status as a non-claimant, and violated its commitment to not taking sides over the dispute."¹⁶⁶ Later, in response to a U.S. State Department proposal to "freeze certain actions and activities that escalate disputes and cause instability" in the South China Sea, the Chinese Foreign Ministry stated, China "hopes that countries outside the region strictly maintain their neutrality, clearly distinguish right from wrong and earnestly respect the joint efforts of countries in the region to maintain regional peace and stability."¹⁶⁷

China's most strident attempts to change the status quo in the South and East China Seas in the past year—establishing an ADIZ in the East China Sea, placing an oil rig in Vietnam's EEZ, attempting to block the Philippines' access to Second Thomas Shoal, and its land reclamation activities in the South China Sea—challenge U.S. efforts to de-escalate ongoing tensions in the Asia Pacific. Calls, however strongly worded, from the United States and other governments for China to cease using intimidation and coercion to achieve its territorial objectives have not deterred Chinese behavior.

In addition to antagonizing U.S. allies in East Asia, PLA aircraft and ships have on several occasions since late 2013 confronted U.S. military aircraft and ships in international airspace and waters in East Asia. On each of these occasions, Chinese military personnel engaged in unsafe, unprofessional, and aggressive behavior.

- In December 2013, U.S. Navy guided missile cruiser *Cowpens* and a PLA Navy amphibious landing ship came close to colliding in international waters of the South China Sea when the

Chinese ship approached to within 300 feet of the *Cowpens* and blocked its path. The *Cowpens* was forced to take evasive action to avoid a collision. Secretary Hagel referred to the Chinese ship's actions as "unhelpful" and "irresponsible," and warned that such behavior "could be a trigger or a spark that could set off some eventual miscalculation."¹⁶⁸

- In August 2014, an armed Chinese J-11 fighter jet crossed several times beneath a U.S. Navy P-8 surveillance plane. The Chinese jet then barrel rolled over the U.S. plane, passing within 20 to 45 feet. U.S. defense officials called the maneuver, which occurred over international waters in the South China Sea, "aggressive," "unprofessional," and a "deeply concerning provocation."¹⁶⁹ The Pentagon disclosed that this was one of four similar incidents since March in which Chinese military aircraft intercepted U.S. planes.

It is unclear whether these actions were tactical-level decisions made by the pilots or the commanding officer of the ship, operational-level decisions made by unit commanders, or actions ordered by higher authorities in Beijing to send strategic signals. Regardless, the PLA has demonstrated a pattern of provocative, aggressive, and dangerous behavior aimed at the U.S. military in maritime East Asia that creates the risk of miscalculation, escalation, and loss of life.

Although confrontation over maritime issues was the biggest contributor to U.S.-China tensions in 2014, other major impasses in the bilateral relationship persisted. Most prominent among these were cybersecurity and North Korea, both of which are addressed elsewhere in this Report.* Regarding the former, longstanding tension between Washington and Beijing over cyber issues continued to plague the relationship in 2014 when China in May suspended a bilateral Cyber Working Group after the U.S. Department of Justice indicted five PLA personnel for cyber espionage.[†]¹⁷⁰ Similarly, China and the United States made no measurable progress in cooperating on North Korea, despite the North's ever-growing threat to East Asian security.

Despite the steady deterioration of the bilateral security relationship between China and the United States, the bilateral military-to-military relationship is becoming increasingly institutionalized. The most visible manifestations of improving relations are more frequent and higher-profile combined and joint naval exercises and increased military engagements at every level between the U.S.

* See Chapter 1, Section 1, "Year in Review: Economics and Trade," for a discussion of China's cyber-enabled commercial theft aimed at the United States. For an assessment of China's cyber policies and their implications for the United States, see U.S.-China Economic and Security Review Commission, *2013 Annual Report to Congress*, November 2013, pp. 243–265. For a discussion of China-North Korea relations and the role North Korea plays in U.S.-China relations, see Chapter 3, Section 2, "Recent Developments in China's Relationship with North Korea."

† Although U.S. Secretary of State John Kerry noted that conversations about cybersecurity at the 2014 U.S.-China Strategic and Economic Dialogue were "frank," it appears the United States made little progress convincing China to change its approach to cyberspace or deter Chinese cyber theft of U.S. intellectual property. In fact, the word "cyber" does not even appear on a 116-item list of "outcomes" of the Strategic and Economic Dialogue's Strategic Track discussions. U.S. Department of State, "U.S.-China Strategic and Economic Dialogue Outcomes of the Strategic Track," July 14, 2014. <http://www.state.gov/r/pa/prs/ps/2014/07/229239.htm>; Lesley Wroughton and Michael Martina, "China, U.S. to Boost Security Ties, but No Breakthroughs," Reuters, July 10, 2014. <http://www.reuters.com/article/2014/07/10/us-china-usa-idUSKBN0FF0Y520140710>.

Armed Forces and the PLA.¹⁷¹ Thus far, however, stronger military-to-military ties have done little to reduce distrust and tension in the broader relationship.

Selected U.S.-China Security-Related Visits and Exchanges

Presidents Obama and Xi meet at The Hague: Presidents Obama and Xi met on the sidelines of the Nuclear Security Summit at The Hague in March 2014. They discussed a wide array of issues. Regarding North Korea, President Obama stressed the need for China and the United States jointly to prioritize denuclearization on the Korean Peninsula. President Xi called for the United States to adopt an “objective and fair attitude” toward China’s maritime disputes, while President Obama “reiterated his support for the security of our allies, Japan and the Philippines.” President Obama underscored the need for the United States and China to work closely on issues of cybersecurity. In response to President Xi’s comments about a *New York Times* report suggesting that the U.S. National Security Agency hacked into the servers of Chinese company Huawei, President Obama assured President Xi that the United States does not engage in espionage to gain commercial advantage.¹⁷² The two leaders plan to meet again in Beijing in November 2014 on the sidelines of the Asia-Pacific Economic Cooperation (APEC) Economic Leaders’ Meeting.¹⁷³

U.S. Secretary of Defense Visits China: On his first trip to China in his current position, U.S. Secretary of Defense Chuck Hagel traveled to China (as well as Hawaii, Japan, and Mongolia) in April 2014 and met with President Xi, Minister of National Defense Chang Wanquan, and Central Military Commission Vice Chairman General Fan Changlong, among others. Secretary Hagel also toured China’s aircraft carrier (he was the first foreign military leader to do so) and delivered a speech at China’s National Defense University. The most tangible outcomes of the visit were announcements to establish a bilateral army-to-army dialogue and to begin an “Asia-Pacific security dialogue” within the year.¹⁷⁴

PLA Chief of General Staff Visits the United States: PLA Chief of the General Staff General Fang Fenghui visited the United States in May 2014, reciprocating Chairman of the Joint Chiefs of Staff General Martin Dempsey’s visit to Beijing in April 2013.¹⁷⁵ In San Diego, General Fang visited the aircraft carrier *Ronald Reagan* and the littoral combat ship *Coronado*. He also observed Marine training at Camp Pendleton and met with Admiral Locklear.¹⁷⁶ At the Pentagon, General Fang received the

**Selected U.S.-China Security-Related Visits
and Exchanges—Continued**

first full-honor arrival ceremony for any chief of defense since 2012.¹⁷⁷ During meetings at the Pentagon, General Dempsey and General Fang disagreed over China's South China Sea territorial claims but agreed to conduct more HA/DR exercises and to cooperate on counterterrorism and antipiracy. They also discussed "establishing a mechanism for mutual notification of major military activities and devising standards of behavior for air and sea military safety in a maritime domain."¹⁷⁸

Other Military Visits and Exchanges: More high-level U.S.-China military-to-military exchanges happened in 2014 than in each of the previous three years.¹⁷⁹ In addition to Secretary Hagel, U.S. officials who were scheduled to visit China in 2014 included the Chief of Staff of the Army, Chief of Naval Operations (who visited China twice), Commandant of the Marine Corps, Pacific Command Commander, and Northern Command Commander. Likewise, the PLA Navy Commander and the Nanjing Military Region Air Force Commander visited the United States. In addition to these high-level visits, 32 activities the Department of Defense characterizes as "functional exchanges," "academic exchanges," and "recurrent exchanges" were planned for the two militaries in 2014.¹⁸⁰

The growing tensions in the U.S.-China relationship, despite some isolated progress in military-to-military relations, reveal an important shift in the way China views the United States. President Xi's government appears willing to cause a much higher level of tension in the bilateral relationship than past administrations have. This may be a consequence of China's growing confidence in its economic and military power. It may also be part of a deliberate effort by China to apply pressure to the bilateral relationship to determine if and how the United States will "push back." In fact, several experts from the region told the Commission China's assertiveness in the South and East China Seas—particularly toward Japan and the Philippines—is actually meant to test the United States' commitment to its treaty allies and the region. China's pursuit of a more competitive relationship with the United States likely will continue to present obstacles to the bilateral relationship in the future.

Conclusions

- China has been aggressively advancing its security interests in East Asia. This has led to tension, confrontation, and near-crises with its neighbors and the United States and has fueled competition with the United States that increasingly appears to be devolving into a zero-sum rivalry. A central characteristic of this pattern is Beijing's effort to force the United States to choose between abandoning its East Asian allies to appease China and facing potential conflict with Beijing by protecting its allies from

China's steady encroachment. China's pattern of behavior is likely to persist.

- China's People's Liberation Army has undertaken provocative, aggressive, and dangerous behavior aimed at the U.S. military in maritime East Asia, which creates the risk of misperception, miscalculation, escalation, and loss of life.
- Having rapidly consolidated power, Chinese President Xi Jinping appears to have achieved a higher degree of control over China's national security and foreign policy than his predecessor and is pursuing a more active role for China in regional and international affairs. President Xi's proposed regional arrangements, the Silk Road Economic Belt, 21st Century Maritime Silk Road, and Bangladesh-China-India-Myanmar Economic Corridor, are designed to project a positive and "responsible" image of China to the region and the world, develop trade routes, and gain access to natural resources. These initiatives, couched in terms of cooperation and friendship, belie China's increasingly strident efforts to intimidate and coerce many of its neighbors.
- China's territorial dispute with Japan remains one of the region's most dangerous flashpoints. China's declaration of an Air Defense Identification Zone over contested waters in the East China Sea in late 2013 ratcheted up tensions with Japan and created an unsafe and unpredictable air environment in the region. On two occasions in 2014, Chinese and Japanese military aircraft activity in China's Air Defense Identification Zone led to close encounters which could have resulted in an accident and loss of life.
- China moved aggressively in asserting its claims in the South China Sea in 2014, using unilateral and destabilizing actions to advance its territorial ambitions. In March, it began attempts to block access to a Philippine military outpost in the South China Sea, Second Thomas Shoal. In May, it moved an oil rig into Vietnam's exclusive economic zone. Throughout the year, it continued work on various land reclamation projects in the South China Sea, including building military facilities on Fiery Cross Reef and potentially Johnson South Reef in the Spratly Islands. China's actions have introduced greater instability to the region and violate China's 2002 agreement with the Association of Southeast Asian Nations, which stipulates that all claimants should "exercise self-restraint in the conduct of activities that would complicate or escalate disputes and affect peace and stability."
- China's People's Liberation Army participated in more exercises and drills with foreign militaries in 2014 than in any previous year since 2005. In particular, China's participation in the U.S.-led Rim of the Pacific exercise illustrated the People's Liberation Army's intent to increase its participation in regional and global security affairs. However, China's decision to send an uninvited intelligence collection ship to the exercise seemed to belie its rhetoric of peaceful cooperation with its neighbors.
- Due largely to institutional and training reforms over the last decade, China's People's Liberation Army now is able to maintain higher day-to-day readiness rates and conduct longer-range and more frequent, robust, and realistic training. As these reforms

continue, the Chinese military gradually will become more proficient and confident operating its advanced weapons, platforms, and systems and conducting large-scale, sophisticated operations.

- China's naval operations within weapons range of U.S. bases and operating areas in the Indian Ocean region will become more frequent as China expands and modernizes its fleet of submarines and surface combatants. However, the Chinese navy in the near term likely will not seek to develop the ability to establish sea control or sustain combat operations in the Indian Ocean against a modern navy.

ENDNOTES FOR SECTION 1

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SECTION 2: CHINA'S MILITARY MODERNIZATION

Introduction

This section examines China's evolving security perceptions; select inputs to China's military modernization; and current and future capabilities of China's naval, air, missile, and space forces. It concludes with a discussion of the implications of China's military modernization for the United States. The statements and assessments presented here are based on Commission hearings, briefs by U.S. and foreign government officials, consultations with nongovernmental experts on China's military,* the Commission's fact-finding trip to Asia, and open-source research and analysis.

China's Evolving Security Perceptions

In the early 1980s, the People's Liberation Army (PLA) began to transition from a large infantry-based peasant army designed to fight protracted wars to a smaller, well-trained, and technology-enabled force. For the next 15 years, China's military modernization was gradual, incremental, and focused primarily on overcoming the PLA's obsolescence, reflecting Beijing's view that a major war was unlikely and that China's economic development was the Chinese Communist Party's (CCP) most pressing strategic goal.

However, Taiwan's steady march toward democracy in the 1990s raised fears in Beijing that Taiwan's increasingly progressive government would produce a president who would pursue *de jure* independence from mainland China. This provided an impetus for the PLA to strengthen its capabilities for Taiwan conflict scenarios. Furthermore, the success of U.S. long-range, precision strikes and network-centric warfare during multiple U.S. and North Atlantic Treaty Organization (NATO) military operations in the 1990s and the U.S. deployment of two aircraft carrier battle groups during the Taiwan Strait Crisis in 1995–1996 demonstrated to Beijing that the United States might be willing to intervene in a Taiwan conflict involving China and could do so effectively. This led Beijing to accelerate its military modernization in the late 1990s and to focus on developing capabilities to counter U.S. naval and air intervention in a Taiwan contingency.¹

By the mid-2000s, the growth of China's export-driven economy and Beijing's recognition of the immense value and vulnerability of

* Commission staff interviewed or consulted the following nongovernmental experts during the drafting of this section; however, these experts do not necessarily agree with or endorse the Commission's assessments and statements contained herein: Ken Allen, Richard Bejtlich, Richard Bitzinger, Dennis Blasko, J. Michael Cole, Gabe Collins, Mark Cozad, Tai Ming Cheung, Ian Easton, Jeffrey Engstrom, Andrew Erickson, Richard Fisher, M. Taylor Fravel, Scott Harold, Terrence Kelly, Adam Liff, Jonathan McDowell, Joe McReynolds, Kevin Pollpeter, Michael Raska, Mark Rosen, Mark Stokes, Lloyd Thrall, and Peter Wilson.

sea lanes and resources in China's maritime periphery combined to incentivize China to develop the ability to protect regional and strategic sea lanes and preserve freedom of movement on the high seas. Faced with this emerging requirement, as well as the desire of CCP leaders to legitimize their regime by successfully asserting China's nationalistic ambitions, China hastened the development of maritime capabilities necessary to assert control over China's claims in the East China Sea and South China Sea and to protect China's access to marine resources.

In 2004, Beijing issued a directive to the PLA to prepare for non-traditional missions beyond China's immediate periphery, including humanitarian assistance/disaster relief, counterterrorism, and international peacekeeping operations. In Beijing's view, these missions are essential to China's development because they enhance China's diplomatic and political leverage in global affairs; bolster China's image as a great nation for domestic and international audiences; and protect China's expanding foreign economic assets and interests, which the CCP views as a cornerstone of the regime's legitimacy and a requirement for preserving the political system.² Linking China's economic and strategic interests abroad created a requirement for the PLA to be able to project power outside of Asia on a limited basis. As the PLA's operational capabilities have improved, its naval, air, and ground forces have begun to operate beyond China's immediate periphery to fulfill these new missions and demonstrate to the world its increasing ability to project military power throughout the Asia Pacific region and beyond.

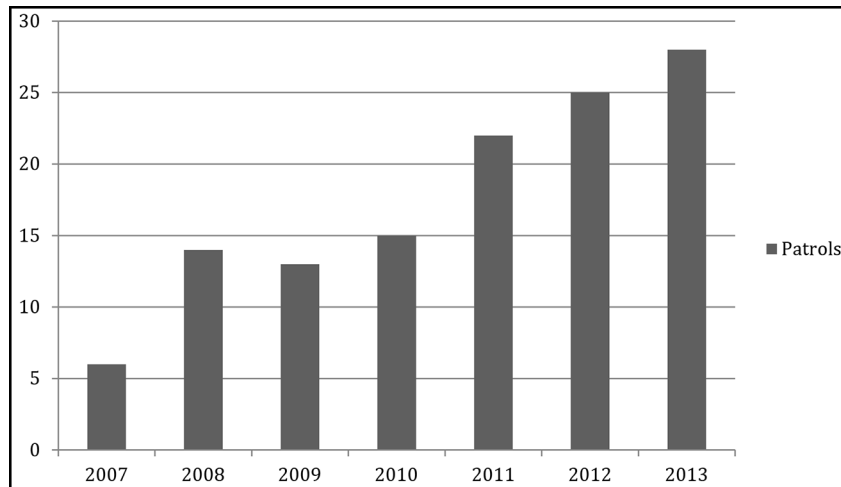
- The number of what official Chinese sources refer to as PLA Navy "combat readiness patrols," or "blue-water training" deployments, increased from six in 2007 to 28 in 2013, according to Commission analysis of U.S. government information and Commission discussions with U.S. and foreign government officials (see Figure 1).³ The PLA Navy now maintains a near-constant presence throughout the first and second island chains (see Figure 2).^{*} This activity currently is concentrated in the Philippine Sea, an area Beijing judges would be crucial to interdicting U.S. forces in a conflict,⁴ but is expanding gradually into the southern reaches of the South China Sea and the Indian Ocean. According to a senior U.S. Navy official, "the amount of time [PLA Navy surface task groups] train in the Philippine Sea now rivals that of the United States."⁵
- Since 2009, the PLA Navy has conducted counterpiracy operations in the Gulf of Aden to protect Chinese commercial shipping interests. Not including naval diplomacy, the initial Gulf of Aden mission represented China's first operational deployment of naval forces outside of China's regional waters. More recently, from January to June 2014, two successive PLA Navy

^{*}PLA strategists and academics argue the United States relies primarily on the "first island chain" and the "second island chain" to encircle strategically China and prevent China from "settling" its objectives vis-a-vis Taiwan, the East China Sea, and the South China Sea. The first island chain extends from Western Japan through the Ryukyus and Taiwan to the Philippines, and the second island chain stretches from the Kuriles through Eastern Japan and the Bonin Islands to Saipan and Guam in the Marianas. Although Western observers usually describe the "island chains" concept as a Chinese one, Chinese analysts claim the concept was developed by the United States following World War II to "surround" and "contain" the newly established People's Republic of China.

ships joined ships from Russia and Europe for 20 joint escorts of chemical weapons used in Syria's civil war from Syria into international waters for neutralization.⁶ The PLA Navy's activities in the Gulf of Aden and the Mediterranean Sea demonstrate its ability to conduct small-scale long-distance naval operations for extended durations despite China's lack of overseas military bases. For more on these PLA Navy operations, see Chapter 2, Section 1, "Year in Review: Security and Foreign Affairs."

- In 2010, China deployed fighter aircraft to Turkey for a joint China-Turkey air exercise that reportedly involved mock dogfights and other air-based maneuvers.⁷ During the Shanghai Cooperation Organization's Peace Mission exercise later in 2010, PLA Air Force bombers, escorted by fighter aircraft, carried out China's first simulated long-range air strike from air bases in western China. Following mid-air refueling, the aircraft rehearsed bombing ground targets in Kazakhstan.⁸ China's activities during these exercises demonstrated for the first time the PLA Air Force's ability to conduct long-range air strikes and air-ground operations.
- In 2011, the PLA Air Force and Navy deployed four cargo aircraft and one surface combatant, respectively, to support and protect the evacuation of 35,000 Chinese nationals from Libya in China's first overseas noncombatant evacuation operation. China's Ministries of Commerce, Foreign Affairs, and Public Security; the Civil Aviation Administration of China; Chinese companies operating in Libya; and Chinese shipping companies also participated in the evacuation and coordinated closely with the PLA. This operation enabled the PLA to demonstrate a commitment to the protection of Chinese citizens overseas and highlighted China's ability to rapidly mobilize civilian assets for military operations.⁹
- In 2013, the PLA contributed nearly 400 troops to the United Nations (UN) Multidimensional Integrated Stabilization Mission in Mali. This was Beijing's first deployment of infantry to support a peacekeeping operation since China began participating in UN missions in 1990. China previously had limited the PLA's participation in peacekeeping operations to noncombat troops—mainly military observers; staff officers; and engineering, medical, and transportation personnel.¹⁰ Additionally, China began to deploy 700 troops to the UN Mission in South Sudan in September 2014, marking Beijing's first contribution of an infantry battalion to a UN peacekeeping force.¹¹
- In early 2014, a PLA Navy surface task group carried out a sophisticated training exercise spanning the South China Sea, eastern Indian Ocean, and Philippine Sea. The deployment marks the first time the PLA Navy has conducted a surface combat readiness patrol in the Indian Ocean.¹² Furthermore, from late 2013 to early 2014, China conducted its first submarine combat readiness patrol to the Indian Ocean.¹³ For more on these PLA Navy deployments to the Indian Ocean, see Chapter 2, Section 1, "Security and Foreign Affairs Year in Review."

Figure 1: PLA Navy Surface and Submarine Combat Readiness Deployments, 2007-2013



Source: This figure reflects Commission estimates and judgments based on Commission analysis of U.S. government information and Commission discussions with U.S. and foreign government officials.

The CCP's 18th Party Congress work report, China's 2012 defense white paper, and official Chinese media indicate continuity in Beijing's assessments of the nature of future warfare and its immediate and long-term threat perceptions. This suggests the PLA's strategy and modernization priorities will remain focused on building offensive and defensive capabilities for long-duration, high-intensity regional conflicts, including those involving U.S. intervention.¹⁴

At the same time, President, CCP Chairman, and Central Military Commission (CMC)* Chairman Xi Jinping's speeches to the military and official PLA statements and documents indicate the PLA probably will increase its efforts to address longstanding, pervasive institutional and structural problems that could limit the PLA's actual ability to sustain combat operations, despite its impressive capability gains. CMC Chairman Xi has repeatedly called for the PLA to develop a strong, professional force that is "fully capable of fighting" and can "win every war" by increasing "combat realism" in training.¹⁵ Moreover, CMC Chairman Xi reportedly told a committee of CCP leaders in March 2014: "There cannot be modernization of national defense and the military without modernization of the military's forms of organization. There has to be thoroughgoing reform of leadership and command systems, force structure and policy institutions." According to David Finkelstein, vice president and director of China Studies of CNA China Studies, "Military reform is part of the larger program that Xi is putting in place to put his imprimatur on the Chinese party-state. ... "This

*The CMC—China's highest military decision-making body—ensures continued CCP control of the PLA, sets military policy and strategy, interprets CCP guidance for the military, and oversees the daily operations of the massive PLA bureaucracy. The CCP chairman since 1989 typically has served as CMC chairman.

time, we're serious' should be the subtext of this new tranche of reform. It will be five years before you see the fruits of it. But 10 years from now, you might see a very different PLA.”¹⁶

Figure 2: China's First and Second Island Chains



Source: U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2012, 2012*, p. 40.

Furthermore, China's offensive missile force—the Second Artillery—may play an increasingly important role in China's military strategy and modernization priorities. Chinese state media reported that CMC Chairman Xi met with the Second Artillery in one of his first public meetings with the PLA since taking office in 2012. During the meeting, he reportedly called on the Second Artillery to “build a powerful and technological missile force” and said the missile force “is the core strength of China's strategic deterrence, the strategic support for the country's status as a major power, and an important cornerstone safeguarding national security.”¹⁷ Chairman Xi's promotion of Second Artillery Commander

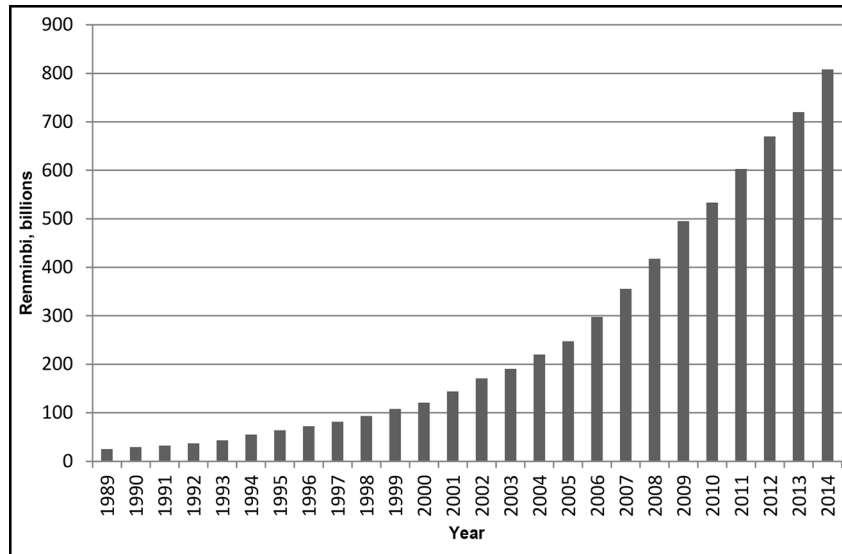
Wei Fenghe to full general shortly after Xi assumed office also may indicate the growing importance of China's missile force. This was the first PLA promotion over which Xi presided as the military's new leader.¹⁸

Select Inputs to China's Military Modernization

Military Spending

China's rapid economic growth has enabled it to provide consistent and sizeable increases to the PLA's budget to support its military modernization and gradually expanding missions. China's announced official projected defense budget increased from 720 billion RMB (approximately \$119.5 billion) in 2013 to 808 billion renminbi (RMB) (approximately \$131.6 billion) in 2014, a 12.2 percent increase. With the exception of 2010, China's official defense budget has increased in nominal terms by double-digits every year since 1989 (see Figure 3).¹⁹

Figure 3: China's Announced Defense Spending, 1989–2014



Note: These numbers represent China's announced official defense budgets, not actual aggregate defense spending. They do not account for inflation or appreciation in the value of China's currency.

Source: This figure reflects Commission judgments based on several sources. Each provides data for part of the period 1989–2014. The most recent source is used when these sources disagree. For 1989–93, David Shambaugh, *Modernizing China's Military: Progress, Problems, and Prospects* (Berkeley, CA: University of California Press, 2002), p. 189; for 1994–2001, Dennis J. Blasko et al., *Defense-Related Spending in China: A Preliminary Analysis and Comparison with American Equivalents* (The United States-China Policy Foundation, 2007), p. 19. <http://www.uscpf.org/v2/pdf/defensereport.pdf>; for 2002–12, Andrew Erickson and Adam Liff, "Demystifying China's Defense Spending: Less Mysterious in the Aggregate," *China Quarterly* (December 2013): 805–830; for 2013, Jeremy Page, "China Raises Defense Spending 12.2% for 2014," *Wall Street Journal*, March 5, 2014. <http://online.wsj.com/articles/SB10001424052702304732804579421021045941010>; and for 2014, Andrew Erickson and Adam Liff, "The Budget This Time: Taking the Measure of China's Defense Spending," *Asan Forum* 2:2 (March–April 2014). <http://www.theasanforum.org/the-budget-this-time-taking-the-measure-of-chinas-defense-spending/>.

China's actual aggregate defense spending* is higher than the officially announced budget due to Beijing's omission of major defense-related expenditures—such as purchases of advanced weapons, research and development programs, and local government support to the PLA—from its official figures. The Department of Defense (DoD) estimates China's actual defense spending in 2013 exceeded \$145 billion, approximately 21 percent higher than China's announced defense budget of \$119.5 billion;²⁰ the Stockholm International Peace Research Institute estimates China's actual defense spending in 2013 was \$188 billion, approximately 57 percent higher than China's announced defense budget.²¹

The definition of defense spending is intrinsically subjective and no major power includes all defense-related spending in its official defense budget. However, relative to the United States and other advanced industrial democracies at a comparable level of military development, China is exceptional in the extent and type of defense spending excluded and, most importantly, the fact that the relevant data generally are not publicly available elsewhere. Therefore, outside calculations of China's actual defense spending—at least those relying on open-source data—involve a significant amount of guesswork. Efforts to assess China's actual defense spending and to compare budgets over time also are hampered by changing official RMB–U.S. dollar (USD) exchange rates since 2005, a lack of consensus about appropriate RMB evaluation, the PLA's poor financial management practices, and the difficulty determining how China's purchasing power parity affects the cost of China's foreign military purchases and domestic goods and services.²²

The PLA focuses on advancing and defending its interests in the Asia Pacific while developing the capacity to project power elsewhere. Moreover, China's defense spending is increasing at a far greater rate than that of the United States as well as U.S. treaty allies and established and emerging U.S. security associates in the region.†

Andrew Erickson, associate professor at the U.S. Naval War College, testified to the Commission that China's defense spending levels provide the PLA with “sufficient funding to develop formidable military capabilities for use on its immediate periphery and in its general region.” Dr. Erickson also explained China's focus on developing regional capabilities has allowed the PLA to “rapidly exploit its geographical proximity and the vulnerabilities of its potential adversaries' military technologies and force structures, potentially placing them on the costly end of a capabilities competition.” He testified this acquisition strategy has provided China with “asymmetric capabilities that are disproportionately efficient in asserting its interests, even though its overall defense spending still remains a distant second to America's.”

*There is no international consensus on which items should or should not be included in a country's “official” defense budget. Every major power—including the United States and major allies—spends money on the military that is not captured in the country's official “defense budget.” For a discussion of several different definitions of total defense-related spending, see Dennis Blasko et al., *Defense-Related Spending in China: A Preliminary Analysis and Comparison with American Equivalents* (United States-China Policy Foundation, 2007). <http://www.uscpf.org/v2/pdf/defensereport.pdf>.

†U.S. treaty allies in the Asia Pacific are Australia, Japan, the Philippines, South Korea, and Thailand. “Established and emerging U.S. security associates” refers to Indonesia, Malaysia, New Zealand, Singapore, Taiwan, Vietnam, and India.

In a paper published by the Center for a New American Security, Captain Henry Hendrix (U.S. Navy) illustrates the efficacy and efficiency of China's asymmetric approach by comparing the cost of China's DF-21D antiship ballistic missile with the cost of the platform it is designed to strike, the U.S. aircraft carrier. Assuming China's DF-21D costs \$11 million per missile, the high-end of an estimate made by two Chinese analysts, and future U.S. aircraft carriers cost \$13.5 billion each, Captain Hendrix explains:

China could build 1,227 DF-21Ds for every carrier the United States builds going forward. U.S. defenses would have to destroy every missile fired, a tough problem given the magazines of U.S. cruisers and destroyers, while China would need only one of its weapons to survive to [achieve] a mission kill. Although U.S. Navy and Air Force leaders have coordinated their efforts to develop the means to operate in an anti-access/area denial environment by disrupting opposing operations, the risk of a carrier suffering a mission kill that takes it off the battle line without actually sinking it remains high.²³

China's defense spending increases appear sustainable. Even high-end foreign estimates put Beijing's actual aggregate defense spending at a moderate 2–3 percent of China's gross domestic product (GDP). Furthermore, increases to the official defense budget often have been exceeded by growing central government expenditures in other areas,²⁴ probably insulating Chinese leaders from potential criticism that they are spending too much on the military.

In a 2013 article in the *China Quarterly* journal, Dr. Erickson and Adam Liff, a postdoctoral fellow at Princeton University's Woodrow Wilson School and an assistant professor at Indiana University, explain the practical consequences of China's defense spending going forward:

The more sophisticated and technology-intensive [the PLA's] systems become, the less benefit the PLA can derive from acquiring and indigenizing foreign technologies, and the less cost-advantage China will have in producing and maintaining them. . . . Developing the capabilities necessary to wage high- or even medium-intensity warfare beyond China's immediate vicinity would require significant additional increases in the defense budget and heavy investment in new platforms, weapons and related systems; as well as training, operations and maintenance; not to mention some form of support infrastructure abroad. If China decides to develop significant power projection capabilities, its investments are likely to be increasingly inefficient and provide significantly less "bang" for a significantly larger "buck."²⁵

Defense Industry

In the late 1990s, China's leaders began to take concrete steps to strengthen the country's defense industry. Although the PLA has not fully overcome its dependence on foreign suppliers, China since then has increased the size and capacity of several defense sectors in support of the PLA's equipment modernization plans. According

to Tai Ming Cheung, director of the University of California's Institute on Global Conflict and Cooperation, "there are so many projects underway [in 2014] that the Chinese defense industry appears to be on steroids."²⁶

Ballistic and Cruise Missiles: China is able to rapidly develop and produce a diverse array of advanced ballistic and cruise missiles. China maintains the largest and most lethal short-range ballistic missile force in the world; fielded the world's first antiship ballistic missile in 2010; deployed its military's first long-range, air-launched land-attack cruise missile in 2012; and will widely deploy its military's first indigenous advanced, long-range submarine-launched antiship cruise missile in the next few years, if it has not already.* Furthermore, the PLA is developing hypersonic glide vehicles as a core component of its next-generation precision strike capability. Hypersonic glide vehicles could render existing U.S. missile defense systems less effective and potentially obsolete (see the text box, "China's Hypersonic Missile Program," later in this section).

Naval Shipbuilding: China has demonstrated it is capable of manufacturing a wide range of naval combatants, including patrol boats, frigates, destroyers, large amphibious ships, and conventional and nuclear submarines and is developing its first indigenous aircraft carrier. Jesse Karotkin, senior intelligence officer for China at the Office of Naval Intelligence (ONI), testified to the Commission that "during 2013 alone, over fifty naval ships were laid down, launched, or commissioned, with a similar number expected in 2014." China's shipbuilders already have surpassed their counterparts in Western Europe, Japan, and South Korea in terms of the number and types of ships they can produce; China's shipbuilders could reach the technical proficiency† of Russian shipbuilders by 2020 and approach the technical proficiency of U.S. shipbuilders by 2030.²⁷

Naval Technology: China is developing its own marine gas turbines and already has produced them domestically for its YUYI-class hovercraft. China likely will develop the ability to mass produce marine gas turbines for larger combatant ships in the next decade. Gas turbines will give PLA Navy ships better acceleration and combat maneuverability than steam turbines that power them today due to their high power-to-weight ratio, speed, fuel efficiency, and compact size. Gas turbines also will allow the PLA Navy to achieve higher readiness rates, because they do not require the start-up time of steam turbines.²⁸

Unmanned Aerial Vehicles: China is one of the world's leading unmanned aerial vehicles (UAV) producers, with dozens of models currently in production. According to a 2012 report by the Defense Science Board:

[China's] move into unmanned systems is alarming. The country has a great deal of technology, seemingly unlimited

*The PLA Navy already possesses an advanced, long-range submarine-launched antiship cruise missile, but it was acquired from Russia.

†"Technical proficiency" refers to the ability to develop, produce, and integrate advanced mechanical, electrical, cargo, habitability, and weapon systems into ships.

*resources and clearly is leveraging all available information on Western unmanned systems development. China might easily match or outpace U.S. spending on unmanned systems, rapidly close the technology gaps and become a formidable global competitor in unmanned systems.*²⁹

China thus far has focused on using UAVs for intelligence, surveillance, and reconnaissance (ISR) but has fielded units capable of delivering lethal weapons (such as missiles) and conducting electronic warfare.³⁰ Furthermore, China's UAV industry recently made advancements in unmanned combat aerial vehicle (UCAV) development. In November 2013, China conducted the inaugural test flight of its first stealth UCAV, the *Lijin*. According to a Chinese aerospace expert quoted in the state-owned *China Daily*, "the [*Lijin*] can be used for reconnaissance and an air-to-ground strike. . . . The size and technological capability of the *Lijin* [also] make it a suitable choice for the [PLA Navy] if it is to select an unmanned combat platform for its aircraft carrier."³¹ In addition to the *Lijin*, China in 2013 revealed it is developing two other UAVs that are designed to carry weapons.³²

China's Hypersonic Missile Program

In January 2014, China tested its first hypersonic missile vehicle, reportedly designated the WU-14. The test was acknowledged by China's Ministry of National Defense and later confirmed by DoD. After the WU-14 is deployed, the missile could enable China to conduct kinetic strikes anywhere in the world within minutes to hours.³³ According to Mark Stokes, executive director of the Project 2049 Institute, Chinese technical literature suggests that research into boost-glide weapons has been underway for some time and that China may seek to field a "boosted hypersonic glide missile capable of intercontinental strike" by 2020 and a "hypersonic scramjet-propelled cruise vehicle for global operations" before 2025.³⁴

China tested the WU-14 again in August, according to two media reports citing unnamed sources.³⁵ The test has not been acknowledged by China or confirmed by DoD. Although the test reportedly was unsuccessful,³⁶ Lora Saalman, an associate professor at the Asia-Pacific Center for Security Studies, explains, "The decision to conduct a second WU-14 test only a few months after its first test shows China's commitment to fast-tracking this program. . . . When compared with the yearly gaps between its [antisatellite] and [ballistic missile] tests in 2007, 2010, 2013, and 2014, the WU-14 accelerates China's developmental timeline exponentially."³⁷

China's Hypersonic Missile Program—Continued

The United States and Russia are the only other countries with developmental hypersonic weapons programs. Hypersonic vehicles create two challenges for existing missile defense systems, which are designed to counter slower, less maneuverable weapon systems. Hypersonic weapons travel at speeds of Mach 5 to Mach 10 (3,840 to 7,680 miles per hour). Furthermore, because hypersonic vehicles launched from ballistic missiles can travel at lower altitudes, they can evade quick detection.³⁸ Lee Fuell, technical director for force modernization and employment at the National Air and Space Intelligence Center (NASIC), testified to the Commission:

The Chinese have talked about a recent successful test of a hypersonic glide vehicle, which is basically a ballistic missile launch system that gets the target or gets the payload fast and high, pitches over, dives to hypersonic speed, and then basically just glides to the target. At this point, NASIC thinks that it is associated with [China's] nuclear deterrent forces. Of great concern would be if [China] was to apply the same technology and capability with a conventional warhead or even just without a warhead because of the kinetic energy that it has in combination with their theater ballistic missiles, you know, in a theater role.

The hypersonic vehicles of any kind, whether they are glide vehicles or cruise missiles, are extremely difficult to defend against because just the time is so compressed between initial detection, being able to get a track, being able to get a fire control solution, and then just being able to have a weapon that can intercept them in some way just because of the speed at which they're moving. If that is combined with more traditional ballistic missile attacks forcing a target to defend against very high aspect warheads coming in this way at the same time they have to defend against low altitude, very high speed targets coming in this way, it makes the defense problem orders of magnitude worse for the defender.³⁹

China's progress modernizing its defense industry is due in large part to China's substantial and sustained investment in defense research and development (R&D). China's large-scale, state-sponsored theft of intellectual property and proprietary information also has allowed China to fill knowledge gaps in its domestic defense and commercial R&D. This process has enabled China to save time and money on defense R&D. China probably allocates at least 5 percent and potentially up to 10 percent of its overall defense spending to R&D, making it second only to the United States in overall defense R&D spending.⁴⁰

Furthermore, according to Battelle's *2014 Global R&D Funding Forecast*:

[China] has increased its overall R&D investments by 12 percent to 20 percent annually for each of the past 20 years;

*while at the same time, U.S. R&D spending increased at less than half those rates. As a result, China's investment is now about 61 percent that of the United States, and continuing to close. At the current rates, China's commitment is expected to surpass that of the United States by about 2022, when both countries are likely to reach about \$600 billion in R&D.*⁴¹

Although this spending is not explicitly intended for use by the PLA, China since the late 1990s has promoted “civil-military integration” to facilitate the transfer of commercial technologies for military use. As part of this effort, China has encouraged civilian enterprises to participate in military R&D and production, sponsored research into dual-use science and technology, and developed common military and civilian technical standards.

The most important coordinating body for China's military R&D is the Central Special Committee, formally known as the National Defense Industry Special Committee. Established in the early 1960s and led through the decades by some of China's top political leaders, the Central Special Committee brings together Chinese civilian and military leaders and top technical experts to direct and coordinate high-priority strategic R&D programs for China's military modernization, such as China's nuclear weapons, nuclear submarines, ballistic missiles, and space weapons. The composition and role of the Committee under President and CMC Chairman Xi is unknown, but it likely is led by Premier Li Keqiang.⁴²

To manage China's investment in R&D, Beijing has promulgated a number of formal R&D plans, research funding programs, and policies that have ambitious goals and concrete timelines. China's R&D initiatives cut across the government, military, and private spheres by coordinating state-funded R&D efforts across them and placing a heavy emphasis on funding basic and foundational research with impacts on multiple fields.

- In its *National Medium- to Long-Term Plan for the Development of Science and Technology (2006–2020)*, approved in 2006, Beijing calls for the transformation of Chinese economy into a science and technology (S&T) powerhouse by 2020 and a global leader by 2050. This “grand blueprint of S&T development” is designed to bring about the “great renaissance of the Chinese nation.”⁴³
- *Document 37*, issued in 2010 by the State Council and CMC, directs the PLA to improve its defense industry by (1) strengthening political guidance and coordination; (2) encouraging the opening up and sharing of military-local resources, particularly for S&T; (3) promoting the mutual transfer of dual-use technology; (4) accelerating the development of national key laboratories that facilitate civilian-military integration; (5) bolstering joint research of dual-use technologies; (6) expanding the scope and intensity of civilian R&D work that civilian research institutions and enterprises conduct in military-use technologies; and (7) developing civil-military integration S&T parks, and civil-military dual-use technology innovation bases.⁴⁴

Comparing R&D in China and the United States, James Lewis, senior fellow and director of the Strategic Technologies Program at the Center for Strategic and International Studies, testified to the Commission:

China has engaged in a sustained investment in technology for thirty years while U.S. investments in science have too often come in fits and starts and been driven by fads. China's policy to maintain and increase economic growth has many flaws, but at least they have one, and the contrast is beginning to tell. A centrally-directed economy subject to heavy political interference can be remarkably inefficient in making investment decisions and in production, but China has compensated for this with heavy and sustained government spending to build capacity and by drawing upon an immense and underutilized talent pool.

Furthermore, Beijing reportedly is drafting a plan to incorporate military research institutes into listed state-owned enterprises, providing them access to capital markets. Currently, these military research institutes are funded entirely by the Chinese government and do not seek profits.⁴⁵ With expanded sources of funding, China's defense industry may improve both its ability to meet PLA requirements and to compete in the global arms market.

Foreign Acquisitions

China turns to foreign countries, mainly Russia, to purchase weapon systems and technologies that it cannot produce indigenously.* Although Moscow's concern over China's record of disregarding intellectual property rights by copying Russian weapon designs † has contributed to a decline in arms sales to China since the mid-2000s, the two sides reportedly are negotiating several sales of major weapon systems, including those designed specifically to counter the United States (for more information on potential Russian arm sales to China, see "China's Maritime Forces" and "China's Air Forces" later in this section).

China also continues to purchase weapon systems and technology from European Union (EU) countries, despite the limited arms embargo those countries imposed on China after its military massacred civilians in the 1989 Tiananmen Square crackdown. Unlike the United States, which enacted strict legislation prohibiting weapon sales to China, the EU embargo is nonbinding, and each member is permitted to interpret it in the context of their respective national laws and regulations.⁴⁶ According to Oliver Brauner, a researcher at the Stockholm International Peace Research Institute (SIPRI):

*Based on the numbers of contracts signed for licensed production and direct export, Russia from 2000–2013 significantly outstripped all other arms suppliers to China. During this same period, China imported smaller numbers of arms from France, Ukraine, Germany, the United Kingdom, Belarus, Israel, and Switzerland. Stockholm International Peace Research Institute, "The SIPRI Arms Transfers Database." <http://www.sipri.org/databases/armstransfers>.

† For example, after absorbing and mastering the technology and knowledge transfers that Russia provided for the Su-27 fighter aircraft, China reverse engineered the Su-27 to create the J-11. The J-11 features improvements over the Su-27, such as a reduced radar cross-section and a better fire-control radar, and has a Chinese-developed engine.

*The EU has so far failed to develop a strategic approach toward the potential security implications of transfers of European militarily sensitive technologies that goes beyond the existing arms embargo and currently lacks effective mechanisms to control the flow of such technologies to China. ... This is mainly because the EU-China relationship continues to be dominated by the economic interests of individual member states, both in trade and increasingly in investments. Furthermore, due to a lack of direct security interests in the Asia-Pacific, Europeans do not generally see China as a security threat or a strategic competitor.*⁴⁷

EU arms makers received licenses to export 3 billion euros (about \$3.8 billion) of military equipment from 2001–2011.* The most recent EU report on arms sales by member nations claims member countries approved licenses to export 173 million euros (about \$220 million) of military equipment in 2012. France accounted for more than 80 percent of these licenses by value, according to the EU report.⁴⁸ Perhaps more importantly, EU countries are exporting dual-use technology that in many cases can be sold without licenses. For example, most of China's indigenous diesel-electric submarines and several of its surface combatants are equipped with engines designed and manufactured by German and French firms.⁴⁹

With the emergence of a more modern and able domestic defense industrial base, China is gradually shifting its focus from purchasing complete foreign systems to procuring foreign military and dual-use subsystems and components via open sources, trade, and traditional and nontraditional espionage. Among China's most effective methods used to acquire sensitive U.S. technology are cyber espionage; witting and unwitting collection by Chinese students, scholars, and scientists; joint ventures; and foreign cooperation. These methods are discussed in this section.

Cyber Espionage: Since at least the mid-2000s, the Chinese government has conducted large-scale cyber espionage against the United States. China has compromised a range of U.S. networks, including those of DoD, defense contractors, and private enterprises. A 2012 Defense Science Board report identified dozens of critical system designs compromised by Chinese cyber actors, including the Patriot Advanced Capability-3 air defense system, the F-35 and the F/A-18 fighter aircraft, the P-8A reconnaissance aircraft, the Global Hawk UAV, the Black Hawk helicopter, the Aegis Ballistic Missile Defense System, and the Littoral Combat Ship. The report also revealed Chinese cyber actors have obtained information on various DoD technologies, including directed energy, the UAV video system, tactical data links, satellite communications, electronic warfare systems, and the electromagnetic aircraft launch system.⁵⁰ However, the actors seeking information on these weapon systems and technologies are not just stealing the designs themselves, but they also are targeting internal communications, program schedules, meeting minutes, and human resource records, among other documents.⁵¹

*The approval of a license to export does not necessarily translate into an actual export.

Dr. Lewis testified to the Commission that cyber espionage “has been and continues to be a godsend to China’s economic and technological modernization.” He explained:

Technological espionage has carried over into cyberspace, as the Chinese discovered that the Internet gave them unparalleled access to poorly secured western networks. Cyber espionage has given China access to defense-industrial databases, [which are] the record of previous weapons programs and an invaluable resource. These databases provide the historic experience of building weapons. They show design changes, modifications, how production problems were overcome, and testing results.

U.S. private cyber security firms such as FireEye have reported that China’s levels of cyber espionage activity have not substantially decreased in 2014,⁵² despite a concerted U.S. effort since 2013 to expose and stigmatize Chinese economic espionage.

China’s material incentives for continuing this activity are immense and unlikely to be altered by small-scale U.S. actions. According to Joe McReynolds, a research associate at Defense Group Inc.’s Center for Intelligence Research and Analysis:

Western analysts of the PLA often frame discussions of China’s expanding Computer Network Operations capabilities as a question of whether the Chinese will one day become a ‘status quo’ power in cyberspace, finding agreement with the United States on shared ‘rules of the road’ that do not privilege either party. Implicit in this thinking is the notion that cyberspace has a natural equilibrium, which the Chinese have temporarily disrupted through aggressive use of Computer Network Operations against military and commercial targets but will one day have a material interest in protecting. However, the emergence of China as a truly status quo power in cyberspace is unlikely. China accrues vast benefits from penetrating foreign networks, and China’s strategic thinkers see the status quo in cyberspace as leaving China intolerably vulnerable due to the United States’ asymmetric control of the Internet’s core infrastructure.⁵³

In February 2014, Admiral Locklear (U.S. Navy), commander of U.S. Pacific Command, explained, “the sooner we come to the realization that if we expect the Chinese to behave . . . well as a nation in cyberspace just because we ask them to, it is not realistic. I think we have to design into our own capabilities and our own systems things that protect our capabilities.”⁵⁴

Using Students, Scholars, and Scientists for Espionage: Chinese students attending U.S. universities have the potential to collect information, whether wittingly or unwittingly, on sensitive U.S. technology on behalf of the Chinese government and military. A 2011 study by the Federal Bureau of Investigation provides an example of how China may have attempted to obtain restricted information or products by targeting U.S. universities:

Despite university warnings on the restrictions on his research, University of Tennessee professor Reece Roth em-

ployed a Chinese and an Iranian student to assist in plasma research while working on a classified U.S. Air Force project that stipulated no foreign nationals could work on the project. Roth also traveled to China with his laptop computer containing export-restricted information and had a sensitive research paper emailed to him there through a Chinese professor's email account. Roth claimed the research was "fundamental" and not sensitive, but a jury concluded otherwise. . . . In September 2008, Roth was found guilty on 18 counts of conspiracy, fraud, and violating the Arms Export Control Act; he was later sentenced to four years in prison.

A country or company does not have to orchestrate the actual theft of the research in order to capitalize on it. It is unknown how the Chinese used the information they obtained from Roth, but because they invited him to visit China and he had a sensitive report emailed to him while there, it should be assumed they were interested in his research and planned to utilize it.⁵⁵

The Defense Security Service's annual report in 2013 also suggests China uses students and academics to acquire sensitive U.S. technology from cleared defense contractors:

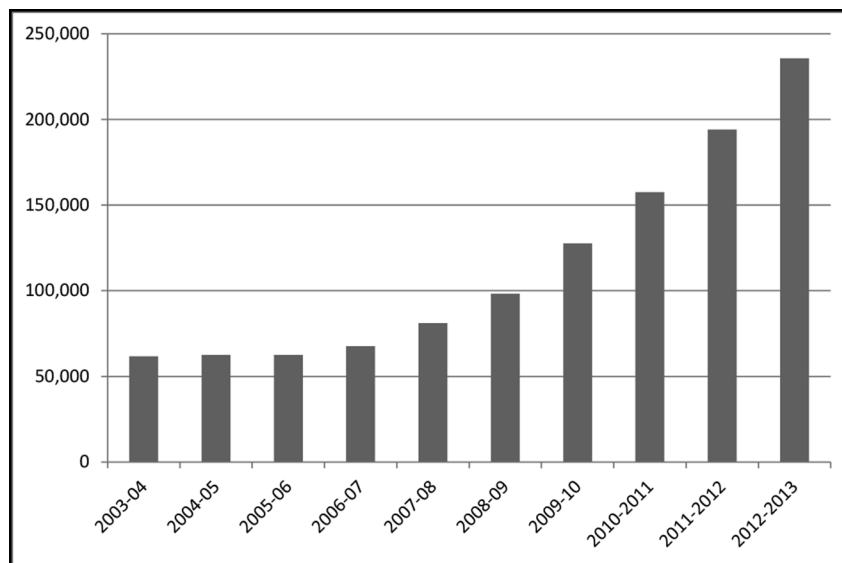
The Defense Security Service assesses [with high confidence] that many East Asia and the Pacific students and academics in the United States probably pose a counter-intelligence and technology transfer threat to cleared industry. While available information does not point to a direct connection between most, if any, academics and home-country intelligence services, such individuals and their sponsoring institutions likely view placement in U.S. facilities as supporting current R&D goals, some of which have military applications. Such placement opportunities are abundant in the United States, and East Asia and the Pacific students will almost certainly continue to seek them.⁵⁶

It has become difficult to discern Chinese traditional and non-traditional collectors from legitimate students as the number of Chinese students in the United States grows.⁵⁷ The number of students from China attending U.S. universities more than doubled from 2008–2009 to 2012–2013, from approximately 100,000 to 235,000 (see Figure 4). In 2012–2013, about 40 percent of these students were undergraduate students and 44 percent were graduate students; for all academic levels, the top fields of study were business/management (29 percent), engineering (19.2 percent), and math/computer science (11.2 percent).⁵⁸ According to a 2014 report by a Chinese organization subordinate to the Ministry of Education, the majority of these students return to China after conducting their studies abroad.⁵⁹ They bring with them advanced scientific knowledge and the tacit knowledge of research strategies and techniques not found in scientific journals.

Furthermore, many PLA universities have established partnerships with Chinese civilian universities. For example, in January 2013, seven PLA universities and seven Chinese civilian univer-

sities signed a “strategic partnership” to “cultivate personnel and explore new modes of military-civilian joint education,” according to Chinese state-owned press.⁶⁰ In addition to training the next generation of China’s defense scientists and engineers, these partnerships concentrate civilian S&T research on emerging military technologies and could provide PLA scientists and engineers with opportunities to interact with U.S. entities and networks to gather information on sensitive U.S. technology.

Figure 4: Students from China Attending U.S. Universities: Total Enrollment, 2003–2004 to 2012–2013 Academic Years



Source: Institute of International Education, *Open Doors: Report on International Educational Exchange*, November 2013. <http://www.iie.org/-/media/Files/Corporate/Open-Doors/Fact-Sheets-2013/Country/China-Open-Doors-Fact-Sheet-2013.ashx>.

Joint Ventures: Chinese companies that acquire advanced technologies through joint ventures with foreign companies are legally required—under Chinese state security laws—to share the technology with the PLA and Chinese intelligence services if requested. The *Law of the People’s Republic of China for Protection of State Secrets*, adopted in 1988, defined state secrets as all “matters that have a vital bearing on state security and national interests.” The law and its implementation guidelines were so broad and vague that they encompassed essentially all conceivable information. A new version of the law, passed in 2010, offers slightly refined but still remarkably unclear parameters for what constitutes a state secret.⁶¹

Furthermore, Chinese joint-venture partners often exploit the agreement by demanding more technology than their foreign partners originally intended. The physical access to proprietary information and technologies provided by a joint venture also enables Chinese partners to more easily steal technology via traditional theft from their foreign partners.⁶²

One instance of this occurred in China's developing rail industry. Japanese Kawasaki Heavy Industries, which had entered into a joint venture with China South Locomotive & Rolling Stock Corporation Ltd. (CSR), accused CSR of copying and selling its bullet train technology on both the domestic and global markets.⁶³ In another case, China-based cyber actors compromised a company shortly after it entered into a joint venture with a Chinese entity. The cyber actors targeted internal communications belonging to the company's executive leadership, who were involved in talks with their Chinese counterparts over a deal involving a specific project. FireEye assesses that the cyber actors then gave this information to the Chinese entity to provide it with an advantage in the negotiations, which, if successful, would provide the Chinese organization with exclusive access to the company's technologies and proprietary data. However, the cyber actors also targeted and stole information pertaining to several of the company's technologies and critical systems, which they likely gave to Chinese companies for use in developing an economic advantage in the industry.⁶⁴

Foreign Cooperation: Chinese state-owned companies are pursuing foreign cooperation to improve their commercial design and manufacturing capabilities. For example, in the late 2000s, a Chinese company signed a deal with a U.S. company for final assembly and testing of the CF34-10A engine in China.⁶⁵ The engine will be used to power China's first indigenous passenger jet aircraft. No open-source information exists on the extent to which current Chinese military programs are exploiting technologies and know-how gained through foreign cooperation on civilian projects, but such activity would be consistent with China's past behavior. China almost certainly views the benefit to military development from such transfers as outweighing the risk of censure for violating end-user agreements on technology transfer deals.

PLA Navy Modernization

In the late 1980s, China began a modernization program to transform the PLA Navy from a coastal force into a technologically advanced navy capable of projecting power throughout the Asia Pacific. China's acquisition of platforms, weapons, and systems has emphasized qualitative improvements, not quantitative growth, and centered on improving its ability to strike opposing ships at sea and operate at greater distances from the Chinese mainland. From 2000 to June 2014, China's aggregate number of submarines and surface ships increased slightly from 284 to 290, while its overall capabilities improved significantly as it rapidly replaced legacy platforms with modern ones equipped with advanced, long-range weapon systems and sensors. China's modern ships also tend to be larger than legacy platforms, allowing them to handle rougher seas, hold more fuel and supplies for long deployments, mount more weapons, and carry larger crews to support a broader set of missions.

As of June 2014, the PLA Navy had 5 nuclear attack submarines (SSNs); 4 nuclear ballistic missile submarines (SSBNs); 39 diesel attack submarines (SS); 12 diesel air-independent attack submarines (SSP); 1 aircraft carrier; 24 destroyers (DD) and guided-

missile destroyers (DDG); 63 frigates (FF), light frigates, and guided-missile frigates (FFG); about 85 missile-equipped patrol craft; and 57 medium and large amphibious ships.⁶⁶

Mr. Karotkin, ONI's senior China analyst, explained to the Commission the inherent difficulties of using Chinese and U.S. naval orders-of-battle for comparing Chinese and U.S. naval capabilities:

... key differences in the types of PLA Navy ships (in comparison to the U.S. Navy) make it extremely difficult to apply a common basis for comparing the order-of-battle. A comprehensive tally of ships that includes hundreds of small patrol craft, mine warfare craft, and coastal auxiliaries provides a deceptively inflated picture of China's actual combat capability. Conversely, a metric based on ship displacement returns the opposite effect, given the fact that many of China's modern ships ... are small by U.S. standards, and equipped primarily for regional missions.

Defining “Modern” Submarines and Surface Ships

In reference to China's submarine force, the term “modern” is used in this report to describe a second-generation submarine that is capable of employing antiship cruise missiles or submarine-launched intercontinental ballistic missiles. The following PLA Navy submarine classes are considered modern: SHANG SSN, YUAN SSP, SONG SS, KILO 636 SS, and JIN SSBN.⁶⁷

In reference to China's surface force, the term “modern” is used in this Report to describe a surface ship that possesses a multi-mission capability, is armed with more than a short-range air defense capability, and has the ability to embark a helicopter. The following PLA Navy surface ship classes are considered modern: LUHU DD, LUHAI DD, LUZHOU DDG, LUYANG I/II/III DDG, Sovremenny I/II DDG, JIANGWEI I/II FF, JIANGKAI I FF, and JIANGKAI II FFG.⁶⁸

The PLA Navy also has a large number of submarines and surface combatants that are not considered modern as well as amphibious warfare, mine warfare, and auxiliary ships with various roles. Including all types and sizes, the PLA Navy currently operates more than 720 ships.⁶⁹

Table 1: PLA Navy Orders-of-Battle, 2000–2020

<i>Type</i>	<i>2000</i>	<i>2005</i>	<i>2010</i>	<i>2014</i>	<i>2020</i>
Diesel Attack Submarines	60	51	54	51	59–64
Nuclear Attack Submarines	5	6	6	5	6–9
Nuclear Ballistic Missile Submarines	1	2	3	4	4–5

Table 1: PLA Navy Orders-of-Battle, 2000–2020—Continued

<i>Type</i>	<i>2000</i>	<i>2005</i>	<i>2010</i>	<i>2014</i>	<i>2020</i>
Aircraft Carriers	0	0	0	1	1–2
Destroyers	21	21	25	24	30–34
Frigates	37	43	49	63	83–97
Amphibious Ships	60	43	55	57	50–55
Coastal Patrol (Missile)	100	51	85	85	85
TOTAL	284	217	277	290	318–351

Note: “Frigates” refers to frigates, light frigates, and guided-missile frigates. The rapid construction of the JIANGDAO-class light frigate accounts for a large share of the anticipated sharp increase of total frigates in the PLA Navy from 2014 to 2020. Some sources classify China’s JIANGDAO ship as a “corvette” rather than a light frigate.

Source: This chart reflects Commission estimates and judgments based on unclassified briefs by U.S. and foreign government officials, discussions with nongovernmental experts on China’s military, consecutive versions of DoD’s annual *Report to Congress on Military and Security Developments Involving the People’s Republic of China*, and consecutive versions of the International Institute for Strategic Studies’ *The Military Balance*.

Modern Submarines

Over the last 14 years, the PLA Navy has increased its inventory of modern nuclear and conventional submarines from one in 2000 to nearly 40 in 2014. China has at least seven classes of modern submarines in use, in production, or under development: SHANG SSN, YUAN SSP, SONG SS, KILO 636 SS, JIN SSBN, Type-096 SSBN, and Type-095 guided-missile, nuclear powered submarine (SSGN).

- The PLA Navy’s SHANG SSN, YUAN SSP, and SONG SS are designed for antisurface warfare and ISR in the approaches to China’s maritime periphery and likely will escort future nuclear deterrent patrols and aircraft carrier task groups. Initially equipped with the subsonic, medium-range YJ–82 antiship cruise missiles (20 nm),* the PLA Navy likely will install the advanced, long-range CH–SS–N–13 antiship cruise missile (120+ nm) on these three classes in the near term, if it has not already.⁷⁰ The upgraded SHANG SSN, YUAN SSP, and SONG SS will complement the PLA Navy’s KILO 636 SS, which is equipped with the supersonic, long-range SS–N–27 antiship cruise missile (120 nm).
- By the end of 2014, the PLA Navy’s JIN SSBN probably will conduct its first patrol while armed with the JL–2 submarine-launched ballistic missile (see “China’s Offensive Missile Force” later in this section for more information). China also is developing its next-generation SSBN and submarine-launched ballistic missile, called the Type 096 SSBN and the JL–3, respectively. The new SSBN likely will feature improved stealth over its predecessor, the JIN, which is a very noisy submarine and could be vulnerable to U.S. and Japanese antisub-

*Throughout this section, the maximum range of cruise and ballistic missiles is indicated in parenthesis following the first reference of the missile.

marine capabilities. Additionally, the new submarine-launched ballistic missile probably will have a longer range and be more lethal than the JL-2.⁷¹

- China is pursuing a new class of nuclear attack submarines, the Type 095 SSGN. Although details of the program are unavailable in open sources, Mr. Karotkin testified to the Commission that the Type 095 may “provide a generational improvement in many areas such as quieting and weapon capacity” and carry the PLA Navy’s first submarine-launched land-attack cruise missile.

Furthermore, China is pursuing joint-design and production of four to six Russian advanced diesel-electric attack submarines containing Russia’s latest submarine sonar, propulsion, and quieting technology.⁷² The deal would improve the PLA Navy’s capabilities and assist China’s development of quiet submarines, thus complicating future U.S. efforts to track and counter PLA Navy submarines.

China’s expanding inventory of modern submarines has significantly enhanced China’s ability to strike foreign surface ships, including those of the U.S. Navy, near major sea lines of communication in the Asia Pacific. According to William Murray, associate research professor at the U.S. Naval War College:

Beijing’s ongoing investment in increasingly modern (and therefore progressively quiet) antiship-cruise-missile-firing diesel submarines reflects a determination to overwhelm and destroy surface ships operating within at least a hundred miles of shallow waters of [China’s] near seas, including Taiwan. This distance is greatly extended and reinforced by the DF-21D [antiship ballistic missile] and by [antiship cruise missiles] launched from surface warships and . . . aircraft. PLA reliance on large numbers of antiship cruise missiles as a means of deterring and defeating opposing surface naval forces represents a significant challenge for a potential adversary, and it suggests specifically that the U.S. Navy’s post-Cold War ability to conduct high-volume, uncontested, maritime strike operations from surface ships in the western Pacific has ended, at least temporarily.⁷³

Aircraft Carriers

China commissioned its first aircraft carrier, the *Liaoning*, in 2012 after approximately six years of renovation work on the Soviet-designed, Ukrainian-built hull and one year of sea trials, and is developing a carrier-based fighter aircraft, the J-15. At least six J-15 prototypes are being tested. China conducted the first test flight of the J-15 in 2009; the first takeoff from a land-based simulated ski jump in 2010; and the first take-offs and landings on the *Liaoning* in 2012. The J-15 had begun performing full-stops and take-offs with maximum weapon loads by September 2013.⁷⁴

Although the *Liaoning* is an important symbol for the Chinese government, Chinese citizens, and regional observers of China’s ever-increasing military power, the *Liaoning*’s military value cur-

rently is limited to humanitarian assistance/disaster relief, helicopter support to ground forces, antisubmarine warfare, airborne early warning, search and rescue, and presence operations. However, after China's first carrier-based aviation unit becomes operational, which is expected by 2016, the *Liaoning* could contribute significantly to the PLA's combat capabilities in the South China Sea, where the nation's airpower today is limited by the short ranges of China's fighter fleet (for more information on China's air combat range limitations, see "China's Air Forces" later in this section). In the South China Sea, China's aircraft carrier probably could quickly overwhelm potential adversaries such as the less capable naval and air forces of the Philippines and Vietnam. The *Liaoning* and its embarked aircraft likely would not represent much of an offensive strike threat against U.S. carrier strike groups operating in the South China Sea, though together they could conduct air defense and antisubmarine warfare in support of China's broader antiaccess/area denial operations against the United States.⁷⁵

The *Liaoning* and its embarked aircraft also could provide China with a potent expeditionary force. During the carrier's first-ever long-distance training deployment in early 2014, it reportedly exercised with at least 12 other ships, including submarines and amphibious ships, suggesting China is experimenting with multiple types of future carrier formations, including those resembling U.S. combined expeditionary groups.⁷⁶

China probably intends to follow the *Liaoning* with at least two and potentially as many as four indigenously-produced hulls⁷⁷ that will be larger than the *Liaoning's* 60,000 tons and feature design and engine improvements. Construction of China's first indigenous carrier has yet to be observed; however, modern ship construction methods allow sections of a ship to be constructed inside buildings long before a full ship is laid down in the dock, making it difficult to corroborate China's progress in this area. If the first of these indigenous carriers began construction in 2013, as U.S. analysts widely reported, it could reach initial operational capability by 2020.⁷⁸ Regarding China's aircraft carrier construction, Admiral Jonathan Greenert (U.S. Navy), the U.S. Chief of Naval Operations, in July 2014 said China is "moving on a pace that is extraordinary."⁷⁹

Modern Surface Combatants

Over the last 14 years, the PLA Navy more than tripled its inventory of modern destroyers and frigates, from less than 15 in 2000 to about 50 in 2014. China also continues to regularly upgrade legacy platforms with new weapon systems as they become available.

- The PLA Navy surface force has significantly enhanced its antisurface warfare capabilities since 2000 with the fielding of advanced long-range antiship cruise missiles and over-the-horizon targeting systems aboard the PLA Navy's newest destroyers and frigates. These antiship cruise missiles include the Russian SS-N-22 (130 nm) and the Chinese YJ-62 (150 nm), YJ-83 (95 nm), and YJ-8A (65 nm). China's newest destroyer,

the LUYANG III, which is expected to enter the force by the end of 2014, will be fitted with a new vertically-launched, long-range antiship cruise missile.⁸⁰

- Although naval air defense has historically been a weak area for the PLA Navy, its newest destroyers and frigates feature medium- or long-range surface-to-air missiles that enable PLA Navy ships to operate beyond land-based air defenses while still maintaining air defense coverage. These surface-to-air missiles include the Russian SA-N-20 (80 nm) and SA-N-7 (20 nm) and the Chinese HHQ-9 (55 nm) and HHQ-16 (40 nm). The new LUYANG III DDG will carry an extended-range variant of the HHQ-9 surface-to-air missile.⁸¹
- The PLA Navy does not have the ability to strike land targets with cruise missiles but likely will field its first sea-based land-attack cruise missile in the next five to ten years on the LUYANG III DDG and Type 095 SSGN. A future sea-based land-attack cruise missile, when combined with greater frequency of long-range combat readiness patrols, will complement the PLA's arsenal of other cruise and ballistic missiles, enhancing Beijing's flexibility for attacking land targets throughout the Asia Pacific, including U.S. facilities in Guam.⁸²
- China appears to be developing a new cruiser, potentially called the Type 055, which reportedly would displace approximately 10,000 tons and carry large numbers of antiship cruise missiles, surface-to-air missiles, and land-attack cruise missiles as well as potentially laser and rail-gun weapons.⁸³

The PLA Navy's expanding and modernizing fleet of combat ships has improved Beijing's ability to project power in the Taiwan Strait, the East China Sea, the South China Sea, and the Philippine Sea as well as to fulfill the PLA Navy's growing missions beyond the Asia Pacific, such as expeditionary warfare, defense of distant maritime trade routes, humanitarian assistance/disaster relief, and counterpiracy. Dr. Erickson explained the trajectory of the PLA Navy and its implications for the United States and the region:

While one of the world's largest, China's slightly-expanding surface fleet has grown far faster in quality. Chinese naval platforms display a growing multi-mission emphasis. Whereas previously antisurface warfare focus eclipsed competing priorities, now increasing emphasis is devoted to the over-the-horizon targeting necessary to support antisurface warfare, as well as to anti-air warfare. China's latest destroyers and frigates, which its large, increasingly advanced shipbuilding industry is building steadily, boast significant area air defense capabilities. With a developing aircraft carrier program, the possibility of land-attack cruise missiles being deployed in surface vessel vertical launch systems in the near future, and deployment of larger amphibious vessels including YUZHAO-class landing platform docks and Zubr air-cushioned landing craft, the PLA Navy may be starting to develop a force capable of

conducting strike operations ashore. As China's consolidating coast guard forces increasingly patrol disputed areas in the Yellow Sea, East China Sea, and South China Sea to advance China's claims there, PLA Navy ships are free to range further afield to bolster China's antiaccess/area denial envelope in the Western Pacific and expand its presence and influence in the Indian Ocean and beyond.⁸⁴

As the PLA Navy has strengthened its long-range capability, it also has bolstered its shorter-range forces with the introduction of 60 HOUBEI-class guided-missile patrol boats (PTGs) from the mid-to late-2000s and the ongoing deliveries of JIANGDAO-class light frigates, which began in 2012.⁸⁵

The HOUBEI PTG, equipped with eight long-range antiship cruise missiles and able to attain high speeds, has significant offensive potential against U.S. and allied forces operating within 200 nm of China's coast. John Patch, a U.S. intelligence analyst, explains the significant operational and tactical ramifications of the HOUBEI PTG for the U.S. Navy:

The HOUBEI PTG's size and partial stealth mean that the [U.S. Navy] may never locate with long-range sensors the firing platform . . . making prosecution by the [U.S. Navy's] surface-launched Harpoon [antiship cruise missile] difficult at best. . . . Air-launched Harpoons or aerial cueing may be solutions, but operating friendly aircraft or unmanned aerial systems within range of China's growing fourth-generation naval air defense raises the risks to these platforms. . . . Recent U.S. government assessments of the Littoral Combat Ship suggest that it too will not be up to the task of HOUBEI hunter-killer missions in high-threat waters.⁸⁶

The JIANGDAO light frigate is armed with several naval guns, torpedoes, and four long-range antiship cruise missiles and is able to support helicopter operations. In contrast to the HOUBEI PTG, the JIANGDAO light frigate appears to be designed primarily for patrol, surveillance, and sovereignty protection in the East China Sea and the South China Sea rather than rapid offensive strike missions. China to date has built 14 JIANGDAO light frigates and is expected to field 15–25 more units. The integration of the JIANGDAO light frigate into the force will free the PLA Navy's larger, more capable surface combatants to focus on operations farther from the Chinese mainland.⁸⁷

Replenishment Ships

The demands of the PLA Navy's expanding missions in distant seas—such as its Gulf of Aden counterpiracy deployments since 2009 and its search for missing Malaysia Airlines Flight 370 in 2014—have strained the capacity of the PLA Navy's logistics fleet, placing its small fleet of replenishment oilers on near-constant deployment status. To help improve the PLA Navy's ability to sustain high-tempo operations at longer ranges, China introduced two new oilers in 2013, bringing its total inventory of oilers to seven, and launched another in June 2014. There are indications China plans to build two additional oilers in the next one to two years and po-

tentially more units later in the decade. Oilers are very easy for China to build; they can be completed (keel to commissioning) in 12 to 18 months.⁸⁸

Amphibious Ships

Beginning in approximately 2006, the PLA Navy's amphibious acquisition shifted from small tank landing ships designed for a full-scale invasion of Taiwan toward larger multipurpose amphibious ships designed to provide the PLA Navy with greater flexibility in balancing its growing commitments to diverse missions. From 2007–2012, the PLA Navy commissioned three YUZHAO-class amphibious transport docks (LPD). China likely will build additional YUZHAO LPDs and may introduce a new landing helicopter assault ship, called the Type-081, in the next five years.⁸⁹

The YUZHAO LPD can carry up to four YUYI hovercraft,* 20 amphibious armored vehicles, and 800 combat troops and at least four helicopters. Given the ship's size, range, and ability to support over-the-horizon operations using helicopters and hovercraft, it is well-suited for amphibious assaults against the islands and reefs in the South China Sea and Taiwan-controlled islands in the Taiwan Strait, as well search and rescue, humanitarian assistance/disaster relief, and counterpiracy. Furthermore, the YUZHAO's LPD's recent deployment to the Indian Ocean and amphibious assault training suggest the PLA Navy is developing operational concepts and proficiencies for expeditionary missions, such as amphibious raids, direct action operations, airfield and port seizures, and personnel and materiel seizure/recovery.

The PLA continues to increase the size, sophistication, and frequency of its amphibious training. China's amphibious force consists of the 1st Amphibious Mechanized Infantry Division and an amphibious armored brigade in the Nanjing Military Region, the 124th Amphibious Mechanized Infantry Division in the Guangzhou Military Region, and the 1st and 164th marine brigades in the South Sea Fleet.⁹⁰

Maritime Law Enforcement Ships

China employs its maritime law enforcement ships to monitor, protest, and in some cases harass foreign vessels engaging in activities that it believes violate its maritime rights. Beijing almost certainly views this approach as less provocative than deploying its navy because it allows China to present the confrontation as a domestic law enforcement issue rather than a foreign defense issue requiring the military's intervention. Nevertheless, the PLA Navy still plays a role by backing up maritime law enforcement patrols from a distance; visibly training and transiting through disputed waters; and resupplying Chinese-controlled land features in the South China Sea.⁹¹

Prior to 2013, China had six chief Maritime Law Enforcement agencies, all with separate and sometimes overlapping missions.

*The YUYI LCUA—similar in size to the U.S.-designed landing craft air cushion—can carry approximately 60 tons and has space for one main battle tank. U.S.-China Economic and Security Review Commission, *Hearing on PLA Modernization and Its Implications for the United States*, written testimony of Jesse Karotkin, January 10, 2014; IHS Aerospace, Defense, and Security, "Analysis: China's Expanding Amphibious Capabilities," October 2013.

China in June 2013 officially consolidated four of these six agencies into the new China Coast Guard* in an effort to address long-standing shortcomings in its coordination of maritime policy and to centralize control of China's maritime law enforcement operations.⁹² The consolidation has allowed the China Coast Guard to more flexibly deploy patrol ships in response to perceived challenges to China's sovereignty and more easily patrol China's maritime claims.

Together, China's maritime law enforcement agencies operate over 100 ocean-going ships and over 1,000 patrol craft and smaller boats.⁹³ Some of these ships have light mounted-weapons but most are unarmed. However, all of them likely have a gun locker for personnel weapons. In some instances, newly constructed ships for the China Coast Guard have provisions for future fit of guns (for example, empty gun collars). According to Mr. Karotkin, future weapons, if installed, would be similar to other coast guards worldwide, including the U.S. and Japanese Coast Guards.

China's maritime law enforcement force, like the PLA Navy, is in the midst of a major modernization program and will expand significantly between now and 2020. Most of these units will be larger and more capable than previous ones, and some will have the ability to embark helicopters.⁹⁴

U.S. Force Posture in Asia

In August 2014, U.S. Pacific Command (PACOM) reported it has approximately 360,000 personnel, including 140,000 assigned to the Navy; 86,000 assigned to the Marine Corps; 29,000 assigned to the Air Force; 60,000 assigned to the Army; 38,000 DoD civilians; and 1,200 Special Operations personnel. PACOM's order-of-battle includes 200 ships, 50 of which are forward-stationed or forward-deployed in the Asia Pacific while the remaining 150 are stationed in the Eastern Pacific (from the West Coast of North America to the International Date Line); 1,500 aircraft (including those from the U.S. Navy, U.S. Marine Corps, and U.S. Air Force); and two Marine Expeditionary Forces.⁹⁵

The declared U.S. rebalance to Asia policy calls for increasing the forward presence of the U.S. Navy from about a 50/50 distribution between the Pacific and the Atlantic to a 60/40 distribution by 2020 and using these assets in new ways to enhance U.S. posture and partnerships. Under its submission to the President's Budget for Fiscal Year 2015, the U.S. Navy would increase its forward presence in the Asia Pacific from about 50 ships on average today to about 67 on average in 2020. The 2020 total includes an additional attack submarine in Guam, where three are stationed today. The U.S. Navy also plans to operate MQ-4C TRITON high endurance UAVs from Guam by 2018.⁹⁶

* China's former six chief maritime law enforcement agencies were China Maritime Surveillance, Fisheries Law Enforcement Command, China Coast Guard, Maritime Customs Service, Maritime Safety Administration, and China Rescue and Salvage. China consolidated the assets of all but the Maritime Safety Administration and China Rescue and Salvage into the new China Coast Guard.

U.S. Force Posture in Asia—Continued

However, budget uncertainty could impact PACOM's planned upgrades to its force posture, presence, and readiness. In March 2014, PACOM Commander Admiral Locklear explained:

Budget uncertainty has hampered our readiness and complicated our ability to execute long-term plans and to efficiently use our resources. These uncertainties impact our people, as well as our equipment and infrastructure by reducing training and delaying needed investments. They ultimately reduce our readiness, our ability to respond to crisis and contingency as well as degrade our ability to reliably interact with our allies and partners in the region.

... Due to continued budget uncertainty, we were forced to make difficult short-term choices and scale back or cancel valuable training exercises, negatively impacting both the multinational training needed to strengthen our alliances and build partner capacities as well as some unilateral training necessary to maintain our high-end warfighting capabilities. These budgetary uncertainties are also driving force management uncertainty. Current global force management resourcing, and the continuing demand to source deployed and ready forces from PACOM [area of responsibility] to other regions of the world, creates periods in PACOM where we lack adequate intelligence and reconnaissance capabilities as well as key response forces, ultimately degrading our deterrence posture and our ability to respond.⁹⁷

China's Air Forces

In the early 1990s, Beijing began a comprehensive modernization program to upgrade the PLA Air Force from a short-range, defensively-oriented force with limited capabilities into a modern, multi-role force capable of projecting precision airpower beyond China's borders, conducting air and missile defense, and providing early warning and dynamic situational awareness. This program has focused on weapon system acquisition and integration, infrastructure upgrades, tactics development, and more recently, training improvements.

Combat Aircraft

The PLA Air Force has approximately 2,200 operational combat aircraft. This total includes air defense and multi-role fighters, ground attack aircraft, fighter-bombers, and bombers (see Table 2). Of these combat aircraft, 330–500 operate from permanent bases in the eastern half of China, allowing them to conduct operations in and around Taiwan without aerial refueling. Moreover, China—using its robust military, civilian, and reserve airfield network—could forward deploy hundreds of additional combat aircraft on short notice in a conflict scenario.⁹⁸

Defining “Modern” Combat Aircraft

The definition of “modern” combat aircraft changes frequently as new technologies are proven and fielded. Combat aircraft can be characterized by their radar signatures, sensors, avionics, weapons, propulsion, controls, materials, and flight performance capabilities. Features and capabilities can be introduced piecemeal as an interim upgrade to an existing airframe, or via the rollout of an all new system.

In reference to China’s combat aircraft, the term “modern” is used in this report to describe the following aircraft, all of which feature advanced avionics and weapon systems: J-10, J-11, JH-7, Su-27, and Su-30. If and when they are acquired by China, the J-15, J-20, J-31, and Su-35 will be added to this list.

Table 2: China’s Combat Aircraft, 2000–2014

	2000	2005	2010	2014
Total (Approximate)	3,000	1,900	1,617	2,193
Modern (Approximate)	65	154	381	593
Percent Modern (Approximate)	2	8	24	27

Note and Source: Estimates of China’s inventory of total combat aircraft, including modern and legacy aircraft in the PLA Air Force and PLA Navy, vary across sources. This chart uses data from consecutive versions of the International Institute for Strategic Studies’ *The Military Balance*, which is the most demonstrably reliable and comprehensive source available.

Air Defense and Multi-role Fighters, Ground-Attack Aircraft, and Fighter-bombers: The PLA Air Force has approximately 2,100 air defense and multi-role fighters, ground attack aircraft, and fighter-bombers, including about 600 that are considered modern.

Complementing China’s new modern combat aircraft are a diverse array of beyond-visual-range air-to-air missiles; all of China’s fighters in 2000, with the potential exception of a few modified Su-27s, were limited to within-visual-range missiles. China over the last 15 years also has acquired a number of sophisticated short- and medium-range air-to-air missiles; precision-guided munitions including all-weather, satellite-guided bombs, antiradiation missiles, and laser-guided bombs; and long-range, advanced air-launched land-attack cruise missiles and antiship cruise missiles. Moreover, China has installed advanced electronic warfare systems on some its aircraft, improving their survivability and lethality and allowing them to jam or interfere with an adversary’s communications.⁹⁹

Comparing U.S. and Chinese trends in fighter modernization from 1995 to the present, David Shlapak, a senior policy analyst at the RAND Corporation, explains:

Now visualize a ... meeting ... in 1995. The U.S. pilot would most likely have been flying an F-15, F-16, or F/A-18—a sophisticated “fourth generation” fighter featuring

*cutting-edge radar and avionics, as well as advanced “fire and forget” air-to-air missiles. The PLA Air Force pilot, on the other hand, most likely would ... be flying a J-6, armed with a Chinese copy of a Soviet copy of a first-generation, short-range U.S. air-to-air missile. The U.S. pilot would have enjoyed an overwhelming qualitative advantage in aircraft, electronics, and weapons. Advance 20 years to the present day. The United States would most likely be represented by the same F-15 equipped with somewhat updated versions of the same sensors, avionics, and missiles. The PLA Air Force, meanwhile, could meet it with a J-10 or J-11, both modern fighters comparable in performance to the fourth-generation U.S. jets. The Chinese pilot would likewise have at its disposal weapons and other equipment that reflect rough parity with those found on the typical U.S. fighter.*¹⁰⁰

With the J-10, J-11, Su-27, and Su-30, China likely would be able to sustain air combat operations along the Taiwan Strait and over the Senkaku Islands, even in the face of U.S. intervention. During a conflict with Japan or Taiwan, China’s quantitative advantages over those countries, combined with the proximity of China’s air bases to the prospective war zones, would allow for a short logistics chain, high sortie rates, and extensive aircraft availability and help to facilitate integrated air defense and command, control, communications, computers, intelligence, surveillance and reconnaissance (C4ISR). Furthermore, the upgraded JH-7 attack aircraft, introduced in the mid-2000s, provides China with potent air intercept and maritime strike capabilities. During a conflict, this platform would allow China to protect its territorial airspace and coastal airspace as well as attack foreign surface forces operating throughout much of the first island chain.

Nevertheless, most of China’s fighter and attack aircraft lack the combat range to conduct air operations in the Philippine Sea and the southern reaches of the South China Sea. Until the PLA Navy’s first carrier-based aviation wing becomes operational, China must use air refueling tankers to enable air operations at these distances from China. However, China’s current fleet of air refueling aircraft, which consists of only about 12 1950s-era H-6U tankers, is too small to support sustained, large-scale, long-distance air combat.¹⁰¹ Furthermore, the H-6U tanker has a limited capacity to hold transferable fuel, China has inadequate support infrastructure on the ground, and most of China’s fighters do not have the equipment necessary to refuel in the air.¹⁰²

To augment its H-6U tankers, China purchased as many as 10 IL-78 tankers from Russia in the mid-2000s. Production issues have prevented Russia from delivering any of the IL-78 tankers to date. Some indications, however, suggest deliveries could begin by the end of 2014. Furthermore, China reportedly acquired a small number of tankers from Ukraine in 2013–2014¹⁰³ and may build a large number of new tankers using the Y-20 transport aircraft’s airframe when it becomes available (for more information on the Y-20, see “Strategic Airlift” later in this section).¹⁰⁴

Over the next five years, China is expected to continue to develop and modernize its fleet of fighter and attack aircraft with variants

of its existing platforms. China also is on track to introduce two fifth-generation fighters, the J-20 and the smaller J-31. China's fifth-generation fighters probably will have low visibility, high maneuverability, and large internal weapons bays and feature advanced sensors, radars, and datalinks. The J-20 and J-31 are expected to reach initial operational capability between 2017–2019.

- China continues to produce variants of the J-10 and J-11 fighters. Future aircraft may feature the more powerful Chinese WS-10A turbofan engine, new radars, new cruise missiles, and design modifications. Among the J-11 variants in production, the J-16 is the most notable because it could have significantly improved range, payload capacity, and maneuverability compared to China's current inventory. China likely will initially use the J-16 to augment the JH-7 and Su-30 in the PLA Air Force and PLA Navy. Depending on its performance and the status of other aircraft programs, the J-16 may eventually replace these fighters.¹⁰⁵
- The PLA Air Force conducted the first test flight of the J-20 in January 2011 and continues to build and test prototypes of the aircraft. The third and fourth prototypes, which flew in March and July 2014, respectively, feature a number of important design modifications, suggesting China continues to improve its stealth technology.¹⁰⁶ The J-20 fighters will be more advanced than any other fighter currently deployed by Asia Pacific countries, adding to China's military leverage against Taiwan, Japan, and South China Sea counterclaimants. Furthermore, according to Mr. Shlapak, the J-20 "will confront the U.S. military with, in effect, the dilemma that the U.S. Air Force has for 20 years been imposing on adversaries—how to defend against low-observable aircraft."¹⁰⁷
- China conducted the first flight test of the J-31 in October 2012 and may have as many as three prototypes in production.* The J-31's intended use remains unknown to foreign observers. A PLA Navy official in 2013 claimed the aircraft is designed for export to China's friends and allies that are unable to purchase the F-35; however, another PLA Navy official in 2013 said the J-31 will serve as the basis for China's next-generation carrier-based aircraft.¹⁰⁸ China also could field the smaller stealth fighter to complement the J-20.

Furthermore, China appears to be in the final stages of purchasing Russian Su-35 fighter aircraft. The Su-35 is a versatile, highly capable aircraft that would offer significantly improved range and fuel capacity over China's current fighters. The aircraft thus would strengthen China's ability to conduct air superiority missions in the Taiwan Strait, East China Sea, and South China

*The J-31 appears to share similarities to Lockheed Martin's F-35 and F-22 fighters. Credible reporting indicates Chinese cyber operators stole data on the design, performance, and other characteristics of the F-35 from the Western defense firms. Trefor Moss, "China's Stealth Attack on the F-35," *Diplomat*, September 27, 2012. <http://thediplomat.com/2012/09/the-fake-35-chinas-new-stealth-fighter/>; Australian, "Security Experts Admit China Stole Fighter Jet Plans," March 12, 2012. <http://www.theaustralian.com.au/news/world/security-experts-admit-china-stole-secret-fighter-jet-plans/story-fnb64oi6-1226296400154?nk=d041d43ecbce5fdb831ea5201b29dee9#>.

Sea as well as provide China with the opportunity to reverse engineer the fighter's component parts, including its advanced radar and engines, for integration into China's current and future indigenous fighters.¹⁰⁹

Bombers: China operates approximately 100 bombers, more than any other country in the world except for the United States and Russia. The current inventory is comprised of multiple variants of the H-6 bomber. China gained the newest and most capable version, the H-6K, in 2013. The H-6K has improved survivability over China's existing bomber fleet and can carry China's new long-range land-attack cruise missile, the CJ-20. The H-6K/CJ-20 weapon system provides the PLA Air Force with the ability to strike Guam, which previously had been out of its range.¹¹⁰ Although the CJ-20 land-attack cruise missile appears to be designed primarily for conventional strikes, the U.S. Air Force Global Strike Command claims it can carry a nuclear warhead.¹¹¹

China's current bomber fleet gives it the ability to hold at risk targets on Taiwan, Japan, Vietnam, and the Philippines, as well as U.S. forces in Japan, South Korea, and Guam. However, China's paucity of air refueling tankers and their limited capacity to offload fuel (discussed previously in this section) could require China's bombers to conduct long-range strike missions without fighter escorts, potentially decreasing their effectiveness in some regional strike missions. Moreover, China's bombers, all of which are derived from a 1950s-era Soviet air-frame, probably require frequent maintenance and have low engine life expectancies. China is developing a new long-range stealth bomber that could address these issues and strengthen the PLA Air Force's ability to project power regionally.¹¹² According to Richard Fisher, senior fellow at the International Assessment and Strategy Center, "Many Chinese sources note [Xian Aircraft Corporation's] new bomber will be a 'flying wing' design similar to the U.S. Northrop-Grumman B-2 Spirit bomber. Xian's design effort has benefited from espionage, especially from the disclosures made by former Northrop engineer Noshir Gawadia."¹¹³ Furthermore, China and Russia are discussing the joint development of an advanced bomber, according to a Russian official quoted in Taiwan media.¹¹⁴

Strategic Airlift

In January 2013, China conducted the first test flight of its indigenously-built jet cargo aircraft, designated the Y-20. China previously was unable to build heavy transports so has relied on 10-15 Russian IL-76 aircraft for strategic airlift since the 1990s.

Aircraft specifications provided by official Chinese media indicate the Y-20 can carry 66 tons, about twice the cargo load of the PLA's only operational jet cargo aircraft, the IL-76, and three times the cargo load of the U.S. C-130. Such a cargo capacity would allow the Y-20 to deploy China's heaviest armored vehicle, the Type 99A2 main battle tank, or about 90 paratroopers. Although the Y-20 currently is powered by Russian D-30KP-2 engines, China ultimately plans to replace these with a Chinese engine, potentially the WS-20, which could feature better fuel efficiency and thrust-to-weight ratio.¹¹⁵ If and when the Y-20 is mated with a Chinese

engine, the airframe could become the basis for a new generation of support planes for the PLA for missions such as air refueling, airborne early warning, command and control, and electronic warfare.¹¹⁶

China probably will operationally deploy its first Y-20 transports within the next two years. A report by China's National Defense University published in 2014 recommends that the PLA build 400 Y-20s.¹¹⁷ Such a large fleet of Y-20s would significantly improve the PLA Air Force's ability to mount and sustain large-scale air operations. In particular, the Y-20 will enhance the PLA's ability to rapidly move cargo, troops, and heavy equipment to Taiwan during an invasion; to China's far western territories for a conflict against India or internal stability operations; and to offshore locations, such as Hainan Island. The Y-20 also will provide PLA commanders with increased flexibility during international peacekeeping and humanitarian assistance operations.¹¹⁸

C4ISR Aircraft

China is developing and fielding a variety of dedicated C4ISR aircraft to provide high-fidelity and time-sensitive tracking for China's air and maritime forces. Lacking airborne early warning and control (AEW&C) aircraft in 2000, the PLA Air Force today deploys 12 of them, split between two models: the KJ-2000 and the KJ-200. The KJ-2000, which China uses primarily for long-range C4ISR operations, "employs radar technology two generations ahead of that used by the U.S. Air Force's E-3C [aircraft]," according to Dr. Carlo Kopp, an Australia-based military analyst and editor of *Air Power Australia*.¹¹⁹ China's smaller KJ-200 complements the KJ-2000 by performing shorter-range C4ISR operations. Dr. Kopp assesses the KJ-200's technology is "two generations ahead of the mechanically steered technology used by the United States."¹²⁰ China likely will continue to steadily field additional KJ-2000 and the KJ-200, potentially doubling its force of AEW&C aircraft over the next five years.

In addition to its two dedicated AEW&C platforms, China over the past decade has fielded more than a dozen specialized C4ISR aircraft, most of which are based on the Y-8. Notably, China recently began to develop a Y-8 variant for antisubmarine warfare.¹²¹ China's current inventory of only a few large, fixed-wing antisubmarine warfare aircraft—the cornerstone of open-ocean antisubmarine warfare for other leading world navies, including the United States and Japan—prevents China from fully realizing the potential of its growing inventory of modern surface combatants and could limit the PLA Navy's ability to conduct antiaccess/area denial operations.

The PLA also is steadily incorporating UAVs into its air forces to supplement manned C4ISR aircraft. Strategic reconnaissance UAVs—such as the BZK-005, deployed in 2010—are designed for long-duration C4ISR at extended distances from the Chinese mainland, allowing them to provide over-the-horizon targeting for the PLA's long-range antiship cruise missiles and antiship ballistic missiles. In particular, they could be useful for detecting, locating, and tracking high-value fixed and mobile targets—such as U.S. and

Japanese naval ships—throughout the East China Sea, northern portions of the South China Sea, and the Philippine Sea. UAVs like the BZK-005 probably will become some of China's most valuable ISR assets in managing maritime disputes and asserting maritime claims. The BZK-005 reportedly conducted its first ISR mission over the East China Sea in September 2013.¹²² According to Mr. Fisher, "Given their low cost, about \$1 million for a UAV the size of the BZK-005, China could soon inundate Japan's ADIZ with UAVs that might overwhelm [Japan's air forces]."¹²³

China also is developing smaller, tactical reconnaissance UAVs designed to provide ISR on fixed and mobile targets on Taiwan and in the Taiwan Strait and to test operational concepts for UAV use. Depending on their basing and range, some of these UAVs also could conduct ISR in portions of the East China Sea and South China Sea.¹²⁴

Land-Based Air Defense

Previously comprised mostly of variants of the 1950s-era SA-2 surface-to-air system, the PLA Air Force's air defense capabilities have significantly improved since 2000. China now has one of the most robust air defense forces in the world.¹²⁵

China in the mid-2000s fielded several new types of indigenous surface-to-air missiles to augment the advanced, long-range surface-to-air missiles it purchased from Russia in the mid-1990s. China's surface-to-air missile systems—which are concentrated along the Taiwan Strait and China's southeastern coast—include the Chinese HQ-9 (124 miles) and the Russian SA-10 (56+ miles), SA-20A (93 miles), and SA-20B (124 miles). China has at least eight and potentially up to 16 SA-20B battalions. The SA-20B is the most advanced surface-to-air missile system sold by Russia.¹²⁶ Complementing the purchase and development of these new systems are improvements in China's national air defense network, which since 2007 has spanned the entire country. Together, these improvements enable the PLA Air Force to extend air defense coverage over the Taiwan Strait and northeastern Taiwan and provide overlapping, integrated air defenses for important Chinese military, industrial, and population centers.¹²⁷

In 2014, Russia approved in principle the sale of its next-generation surface-to-air missile system, the S-400, to China, according to Russian media reports. Such a sale has been under negotiation since at least 2012.¹²⁸ The S-400 would more than double the range of China's air defenses from approximately 125 to 250 miles—enough to cover all of Taiwan, the Senkaku Islands, and parts of the South China Sea¹²⁹—and feature an improved ballistic missile defense capability over China's existing surface-to-air missile systems.¹³⁰ As China pursues the S-400, it also is developing its next-generation indigenous surface-to-air missile, the HQ-19, which likely will have features and range similar to the S-400.¹³¹

China's Offensive Missile Force

Since the mid-1990s, China's offensive missile force—the Second Artillery—has added significant conventional strike capabilities; previously, the force had been comprised of only nuclear ballistic

missiles. During this period, the Second Artillery has developed and fielded a robust and modern short-range ballistic missile force. The force also has introduced conventional medium-range ballistic missiles, intermediate-range ballistic missiles, antiship ballistic missiles, and ground-launched land-attack cruise missiles designed to counter key aspects of U.S. military power. Meanwhile, China has gradually modernized and expanded its nuclear strike capability by deploying its first road-mobile intercontinental ballistic missiles and its first credible sea-based nuclear deterrent capability.¹³²

According to DoD, the Second Artillery has at least 1,330 and potentially more than 1,895 ballistic and cruise missiles, which includes 1,000–1,200 short-range ballistic missiles, 75–100 medium-range ballistic missiles, 5–20 intermediate-range ballistic missiles, 50–75 intercontinental ballistic missiles, and 200–500 ground-launched land-attack cruise missiles.¹³³ A more precise estimate of the number of missiles in the Second Artillery’s inventory is hindered by DoD’s omission of detailed missile orders-of-battle in its annual report to Congress on China. According to Hans Kristensen, director of the Nuclear Information Project at the Federation of American Scientists, “Up until 2010, the annual DoD reports included a table overview of the composition of the Chinese missile force. But the overview gradually became less specific until it was completely removed from the reports in 2013. The policy undercuts the Administration’s position that China should be more transparent about its military modernization by indirectly assisting Chinese government secrecy.”¹³⁴

Conventional Strike

Short-Range Ballistic Missiles (less than 621 miles): In 2002, China had 350 short-range ballistic missiles. After a rapid expansion, China today has the world’s largest short-range ballistic missile force, with 1,000–1,200 missiles. The force also has become more lethal as China has gradually replaced older missiles lacking a true precision-strike capability with new short-range ballistic missiles and variants of existing short-range ballistic missiles that feature longer ranges and improved accuracies and payloads.¹³⁵

China’s short-range ballistic missile force consists mainly of multiple variants of the DF–11 and DF–15. All of these missiles are solid-propelled and road-mobile; most variants have a maximum range of more than 373 miles, allowing them to strike targets throughout Taiwan.¹³⁶ Moreover, the Second Artillery in 2010–2011 fielded a new short-range ballistic missile, the DF–16. The DF–16 reportedly has a higher reentry velocity than the DF–11 and DF–15 and an extended range of 621 miles. In addition to increasing China’s ability to penetrate Taiwan’s missile defenses, the DF–16 for the first time allows the Second Artillery to target large sections of the East China Sea with short-range ballistic missiles.¹³⁷

China also is developing several new road-mobile short-range ballistic missiles: the CSS–9, the CSS–14, the CSS–X–15, and the

CSS-X-16.* These missiles have maximum ranges of between 93–174 miles¹³⁸ and presumably feature greater accuracy and precision than previous models. According to Mr. Fisher, “China’s development of new classes of short-range ballistic missiles is prompted by the requirement to strengthen its ability to coerce or attack Taiwan, but also by commercial pressures to offer better short-range ballistic missiles to capture export markets. Short-range ballistic missiles are produced at two, possibly three Chinese factories, and it is Chinese government policy to promote vigorous competition between them and to support export efforts.”¹³⁹

During a conflict with Taiwan, China likely would use its short-range ballistic missiles to strike critical military infrastructure and command and control nodes as well as key political and economic centers. Chinese military doctrine suggests the Second Artillery would fire large salvos from multiple axes to confuse, overwhelm, and exhaust Taiwan’s ballistic missile defenses. The Second Artillery has been conducting increasingly larger missile exercises; to date, its live-fire exercises have included salvos of at least ten missiles.¹⁴⁰ Mr. Murray testified to the Commission that China’s expanding and modernizing missile force could rapidly defeat Taiwan’s defenses, despite Taipei’s significant investments in ballistic missile defenses.

Theater-Range Ballistic Missiles (621 miles to 3,418 miles): † In 2008, the PLA fielded its first conventional theater-range ballistic missile, the DF-21C medium-range ballistic missile. With a range of more than 1,087 miles, the DF-21C gives China the ability to target U.S. forces in Japan and South Korea. China also may have deployed a second conventional medium-range ballistic missile in 2010–2011: a DF-16 variant with a maximum range of 746 miles.¹⁴¹

China plans to deploy a new conventional intermediate-range ballistic missile that can strike land targets out to at least 1,864 miles and potentially as far as 3,418 miles.¹⁴² This missile, which probably will be operationally deployed in the next five years, could allow China to threaten U.S. forces in Guam, Northern Australia, and Alaska, and U.S. bases in the Middle East and the Indian Ocean, depending on its ultimate range. Moreover, according to Ian Easton, research fellow at the Project 2049 Institute, “If the PLA’s conventional intermediate-range ballistic missile program is successful, it is possible that China could develop the means to threaten Hawaii and the West Coast of the United States with a conventional intermediate-range ballistic missile by sometime in the early-to-mid 2020s.”¹⁴³

*These are the NATO designators provided by the U.S. National Air and Space Intelligence Center; the Chinese designators for these short-range ballistic missiles are unknown to foreign observers at this time.

† Theater-range ballistic missiles are comprised of medium-range ballistic missiles (621–1,864 miles) and intermediate-range ballistic missiles (1,864–3,418 miles).

Table 3: China's Conventional Ballistic Missiles

Chinese Designator and Missile Type	NATO Designator	Deployment Mode	Approximate Maximum Range (Miles)
DF-11 SRBM	CSS-7 Mod 1	Road Mobile	186
DF-11A SRBM	CSS-7 Mod 2	Road Mobile	373
DF-15 SRBM	CSS-6 Mod 1	Road Mobile	373
DF-15A SRBM	CSS-6 Mod 2	Road Mobile	528+
DF-15B SRBM	CSS-6 Mod 3	Road Mobile	450+
DF-16 SRBM	CSS-11 Mod 1	Road Mobile	621
DF-16 MRBM	Unknown	Road Mobile	746
DF-21C MRBM	CSS-5 Mod 3	Road Mobile	1,087+
DF-21D ASBM	CSS-5 Mod 5	Road Mobile	932+

Sources: Commission judgments and estimates based on analysis by nongovernmental experts on China's military, consecutive versions of the annual U.S. DoD *Report to Congress on Military and Security Developments Involving the People's Republic of China*, a 2013 report by the U.S. National Air and Space Intelligence Center, and U.S. and Asian media reporting.

Antiship Ballistic Missiles: In 2010, China deployed the world's first antiship ballistic missile, the DF-21D. The DF-21D has a maximum range of more than 932 miles and is armed with a maneuverable warhead, providing China with the ability to threaten U.S. Navy aircraft carriers operating east of Taiwan from secure sites on the Chinese mainland. China may be developing an even longer-range antiship ballistic missile capable of striking ships operating in maritime areas as far as Guam.¹⁴⁴ The Second Artillery appears to have already formed two antiship ballistic missile brigades—not testing or training units—in Qingyuan City (southeastern China)¹⁴⁵ and Laiwu City (northeastern China).¹⁴⁶ The antiship ballistic missile brigade in Qingyuan reportedly conducted one of its first major field training exercise in spring 2011.¹⁴⁷

Ground-Launched Land-Attack Cruise Missiles: In 2007–2008, the Second Artillery introduced its first ground-launched land-attack cruise missile, the CJ-10. China's large inventory of CJ-10s—200–500 missiles deployed on 40–55 road-mobile launchers¹⁴⁸—suggests the missile plays a central role in China's regional strike strategy. The CJ-10 reportedly features a stealthy design and has a maximum range over 932 miles, giving the PLA the ability to hold at risk U.S. forces in Japan and South Korea.¹⁴⁹ Although it appears to be primarily intended for conventional missions, a 2013 NASIC report suggests the missile also could carry a nuclear warhead.¹⁵⁰ Mr. Fuell explained the potential utility of China's emerging land-attack cruise missile capabilities to the Commission:

Combining long stand-off distances with high accuracy makes cruise missiles an excellent tool to reach targets difficult to engage with many other classes of weapons. Because there is an overlap in the kinds of targets China is likely to engage with either ballistic missiles or cruise mis-

siles, land-attack cruise missiles provide key operational and planning flexibility. These weapons are likely to reduce the burden on ballistic missile forces, as well as creating somewhat safer strike opportunities for Chinese aircrew, allowing them to engage from much longer distances and/or from advantageous locations of their own choosing. This in turn will complicate their adversary's air and missile defense problem. Combining cruise missiles with ballistic missile attacks on the same target further complicates the defensive problem. Fundamentally, land-attack cruise missiles are yet another component of China's complex arsenal, and could be used as a flexible tool for engaging a range of targets.

Nuclear Strike

China's official pronouncements about its nuclear policies and strategies are short, rare, and vague. For example, China's 2012 Defense White Paper only says that "if China comes under a nuclear threat, the nuclear missile force will act upon the orders of the Central Military Commission, go into a higher level of readiness, and get ready for a nuclear counterattack to deter the enemy from using nuclear weapons against China."¹⁵¹ Previous defense white papers and other official Chinese statements convey that "China consistently upholds the policy of no first use of nuclear weapons, adheres to a self-defensive nuclear strategy, and will never enter into a nuclear arms race with any other country." However, China's so-called "no first use" policy is subject to interpretation, and some doctrinal evidence suggests exceptions to the policy exist. For example, according to a Second Artillery doctrinal publication, "under our predetermined nuclear guidelines, in general cases China would retaliate only after being hit first."¹⁵² The text does not explain under which circumstances China would conduct a first strike. Other PLA writings suggest China might deem an enemy first strike to have occurred when Beijing believes an enemy nuclear attack is imminent or judges an enemy is threatening the destruction of China's nuclear deterrent capability with conventional weapons.¹⁵³ For planning purposes, Chinese strategists consider the United States as the principal threat.¹⁵⁴

High-confidence assessments of the numbers of Chinese nuclear-capable ballistic missiles and nuclear warheads are not possible due to China's lack of transparency about its nuclear program. China's official statements about its nuclear forces and nuclear capabilities are short, rare, and vague in order to maintain "strategic ambiguity."

DoD has not released detailed information on China's nuclear program, only noting in 2013 that "China's nuclear arsenal currently consists of approximately 50–75 intercontinental ballistic missiles,"¹⁵⁵ and that "the number of Chinese intercontinental ballistic missile nuclear warheads capable of reaching the United States could expand to well over 100 within the next 15 years."¹⁵⁶ DoD also has not provided an unclassified estimate of China's nuclear warhead stockpile since 2006, when the Defense Intelligence Agency said China had more than 100 nuclear warheads.¹⁵⁷ Estimates of China's nuclear forces by nongovernmental experts and

foreign governments tend to be higher. Dr. Kristensen and Robert Norris, senior fellow for nuclear policy at the Federation of American Scientists, assess “China has approximately 250 [nuclear] warheads in its stockpile for delivery by nearly 150 land-based ballistic missiles, aircraft, and an emerging ballistic submarine fleet,”¹⁵⁸ while Taiwan’s Ministry of National Defense asserts China has “over 200 nuclear warheads.”¹⁵⁹ Some analysts assess China may be obscuring a much larger nuclear effort and have much larger stockpiles.*

Despite the uncertainty surrounding China’s stockpiles of nuclear missiles and nuclear warheads, it is clear China’s nuclear forces over the next three to five years will expand considerably and become more lethal and survivable with the fielding of additional road-mobile nuclear missiles; as many as five JIN SSBNs, each of which can carry 12 JL-2 submarine-launched ballistic missiles; and intercontinental ballistic missiles armed with multiple independently targetable reentry vehicles (MIRVs) (for an overview of China’s nuclear ballistic missiles, deployment modes, and maximum ranges, see Table 4). At the same time, China likely will continue to improve its silo-based nuclear force; harden its nuclear storage facilities, launch sites, and transportation networks; and expand its already extensive network of underground facilities.¹⁶⁰

Table 4: China’s Nuclear Ballistic Missiles

Chinese Designator and Missile Type	NATO Designator	Deployment Mode	Approximate Maximum Range (Miles)
DF-3A IRBM	CSS-2	Transportable	1,864
DF-4 ICBM	CSS-3	Transportable	3,418+
DF-5A ICBM	CSS-4 Mod 2	Silo	8,078+
DF-5B ICBM	CSS-4 Mod 3	Silo	8,078+
DF-21 MRBM	CSS-5 Mod 1	Road Mobile	1,087+
DF-21A MRBM	CSS-5 Mod 2	Road Mobile	1,087+
DF-31 ICBM	CSS-10 Mod 1	Road Mobile	4,474+
DF-31A ICBM	CSS-10 Mod 2	Road Mobile	6,959+
JL-1 SLBM	CSS-NX-3	SSBN	1,056
JL-2 SLBM	CSS-NX-14	SSBN	4,598+

Note: China likely is in the process of phasing out the DF-3A IRBM.

Source: Commission judgments and estimates based on analysis by nongovernmental experts on China’s military, consecutive versions of the annual U.S. DoD *Report to Congress on Military and Security Developments Involving the People’s Republic of China*, a 2013 report by the U.S. National Air and Space Intelligence Center, and U.S. and Asian media reporting.

* For example, Georgetown University professor Phillip Karber has suggested China may have 3,000 or more nuclear weapons. This assertion apparently follows from extrapolations of historical Western reports and analysis of the elaborate underground tunnel complexes China uses for nuclear weapons storage and transportation. These methods have received criticism from other arms control experts and scholars, who place greater emphasis on suspected nuclear materials stockpiles and delivery systems.

Road-Mobile Nuclear-Capable Ballistic Missiles: China deployed the DF-31 intercontinental ballistic missiles in 2006 and the more advanced DF-31A intercontinental ballistic missiles in 2007. China apparently has ceased production of the DF-31 but continues to field additional DF-31As.¹⁶¹ Unlike the rest of the Second Artillery's intercontinental ballistic missile force, the DF-31 and DF-31A are road mobile, allowing for faster launch times and making them much more difficult for an adversary to locate and attack. Furthermore, the new missiles use solid fuel instead of liquid fuel, increasing portability and service life while reducing maintenance costs. The DF-31A has a maximum range of at least 6,959 miles, allowing it to target most of the continental United States.¹⁶²

Sea-Based Nuclear Deterrent: China has commissioned three JIN SSBNs since 2007 and likely will introduce two additional units by 2020.¹⁶³ The JIN SSBN's intended weapon, the JL-2 submarine-launched ballistic missile, appears to have reached initial operational capability¹⁶⁴ after approximately ten years of R&D, giving China its first credible sea-based nuclear deterrent.* The JL-2's range of approximately 4,598 miles gives China the ability to conduct nuclear strikes against Alaska if launched from waters near China; against Alaska and Hawaii if launched from waters south of Japan; against Alaska, Hawaii, and the western portion of the continental United States if launched from waters west of Hawaii; and against all 50 U.S. states if launched from waters east of Hawaii.¹⁶⁵

A November 2013 article in a Chinese newspaper sponsored by the CCP hails the arrival of China's JIN SSBN and JL-2 submarine-launched ballistic missile and illustrates a notional employment scenario against the United States:

*After a nuclear missile strikes a city, the radioactive dust produced by 20 warheads will be spread by the wind, forming a contaminated area for thousands of kilometers. The survival probability for people outdoors in a [746 to 870 mile] radius is basically zero. Based on the actual level of China's one million tons TNT equivalent small nuclear warhead technology, the 12 JL-2 nuclear missiles carried by one JIN nuclear submarine could cause the destruction of five million to 12 million people, forming a very clear deterrent effect. There is not a dense population in the United States' midwest region, so to increase the destructive effect, the main soft targets for nuclear destruction in the United States will be the main cities on the west coast, such as Seattle, Los Angeles, San Francisco, and San Diego.*¹⁶⁶

The same article includes a graphic depicting the potential destructive effect of a Chinese intercontinental ballistic missile attack on Los Angeles (see Figure 5). The graphic evokes then Lieutenant General Xiong Guangkai's assertion to Chas Freeman, a former

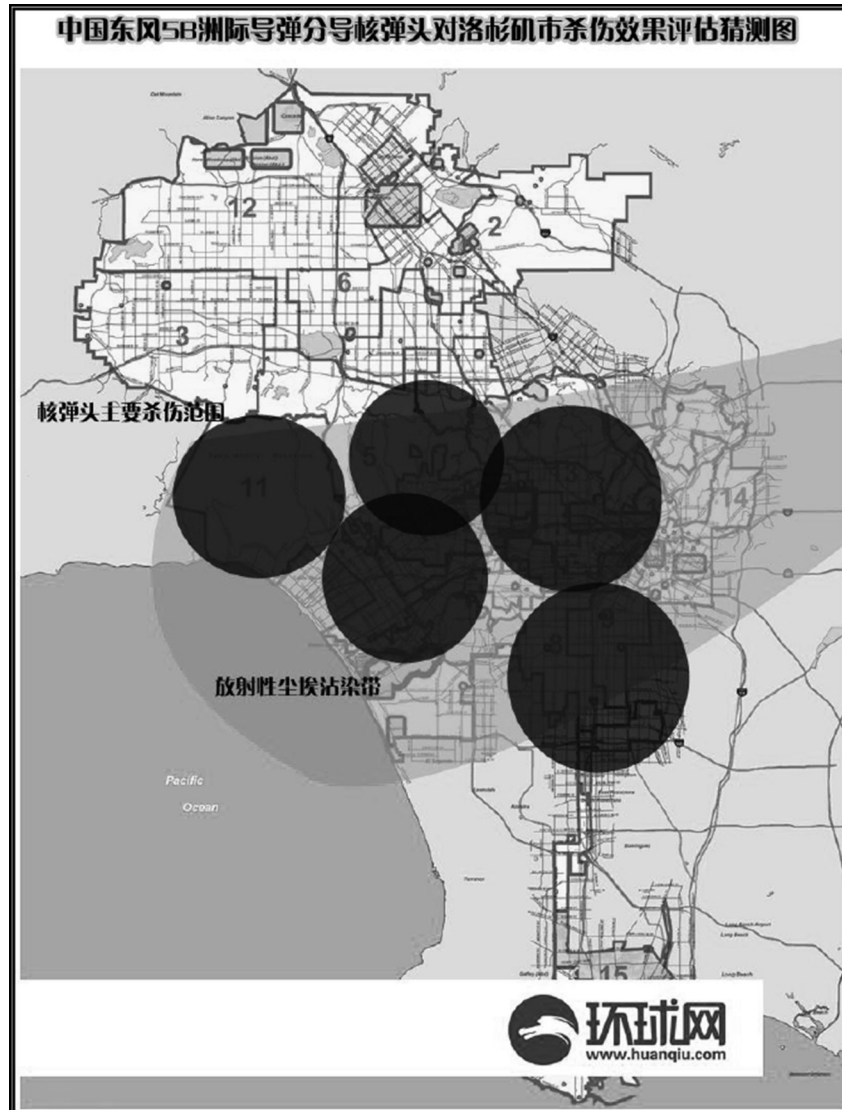
*The PLA Navy has operated one SSBN/SLBM weapon system with the XIA-class SSBN and the JL-1 SLBM since the late 1980s; however, the U.S. Department of Defense does not consider it to be a credible threat. U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2013*, May 2013, p. 6; U.S. Office of Naval Intelligence, *The People's Liberation Army Navy: A Modern Navy with Chinese Characteristics*, 2009, p. 23.

U.S. assistant secretary of defense, that “Americans care more about Los Angeles than they do about Taiwan” during the Taiwan Strait Crisis in 1995–1996. Lieutenant General Xiong, who at the time was a deputy chief in the PLA office that is responsible for intelligence and international matters, was suggesting China could use its intercontinental ballistic missile force to target the United States for intervening on behalf of Taiwan in a cross-Strait conflict.¹⁶⁷

MIRVs: In December 2013, China reportedly conducted the second flight test of a new road-mobile intercontinental ballistic missile, the DF-41. The DF-41, which could be deployed as early as 2015, may carry up to 10 MIRVs and have a maximum range as far as 7,456 miles, allowing it to target the entire continental United States.¹⁶⁸ In addition, some sources claim China has modified the DF-5 and the DF-31A to be able to carry MIRVs.¹⁶⁹ Moreover, China in late September reportedly conducted the first flight test of a new DF-31 variant, the DF-31B, which may be able to carry MIRVs.¹⁷⁰ China could use MIRVs to deliver nuclear warheads on major U.S. cities and military facilities as a means of overwhelming U.S. ballistic missile defenses. Mr. Fuell testified to the Commission:

Mobile missiles carrying MIRVs are intended to ensure the viability of China's strategic deterrence. MIRVs provide operational flexibility that a single warhead does not. Specifically, they enable more efficient targeting, allowing more targets to be hit with fewer missiles, more missiles to be employed per target, or a larger reserve of weapons held against contingency. China is likely to employ a blend of these three as MIRVs become available, simultaneously increasing their ability to engage desired targets while holding a greater number of weapons in reserve.

Figure 5: Chinese Media Depiction of the Potential Destructive Effect of a MIRV-Capable Intercontinental Ballistic Missile on Los Angeles



Source: Pei Shen, "China Has Undersea Strategic Nuclear Deterrent against United States for the First Time," *Global Times*, October 13, 2013. Open Source Center translation. ID: CHR2013100762536387.

China's Space and Counterspace Programs ***Expanding Space-Based C4ISR Capabilities***

The PLA in the mid-1990s began an extensive C4ISR modernization program to improve its ability to command and control its forces; monitor global events and track regional military activities;

and increase the range at which it can place U.S. ships, aircraft, and bases at risk with conventional missile systems. Mr. Karotkin explained to the Commission the “formidable challenge” for China of building and disseminating a picture of all air and maritime activities in the Asia Pacific:

China must build a maritime and air picture covering nearly 875,000 square nautical miles (sqnm). The Philippine Sea, which could become a key interdiction area in a regional conflict, expands the battlespace by another 1.5 million sqnm. In this vast space, many navies and coast guards converge along with tens of thousands of fishing boats, cargo ships, oil tankers, and other commercial vessels.

China’s initial efforts focused on developing a robust and secure network of fiber optic cables, mobile radios, datalinks, and microwave systems. However, China in the mid-2000s shifted the emphasis of its C4ISR modernization program to expanding and enhancing its space-based infrastructure. China now has approximately 100 active satellites in orbit,* compared to about 10 in 2000 and 35 in 2008.† Although these satellites conduct a wide array of missions, many serve C4ISR functions for the PLA, and those satellites that are capable of contributing to a military mission likely do so.¹⁷¹

Maritime ISR: China is fielding increasingly sophisticated space-based electro-optical, synthetic aperture radar, and electronic reconnaissance satellites. Combining these varying capabilities is crucial, as satellite instruments face tradeoffs in achieving high resolution in spatial, spectral, radiometric, and temporal categories.

China’s current maritime ISR satellite coverage likely is concentrated in the first island chain to support PLA operations in potential conflicts against Taiwan, Japan, or South China Sea counterclaimants but almost certainly will expand to the Philippine Sea and Indian Ocean in the next five to ten years as China fields additional ISR and data relay satellites. Mr. Stokes explained the implications of this development to the Commission:

As its persistent sensor and command and control architecture increases in sophistication and range, the PLA’s ability to hold at risk an expanding number of targets throughout the western Pacific Ocean, South China Sea, and elsewhere around its periphery is expected to grow. A survivable space-based sensor architecture, able to transmit reconnaissance data to ground sites in China in near-real time, fa-

*This number excludes Chinese satellites that are in orbit but assessed to no longer be active. Including those that are both active and inactive, China has 146 satellites in orbit. Jonathan McDowell, “China Satellite Update: 2014,” *Jonathan’s Space Report*, June 2014. <http://planet4589.org/space/papers/china2014.pdf>; Jonathan McDowell (Astrophysicist, Harvard-Smithsonian Center for Astrophysics), e-mail interview with Commission staff, June 15, 2014.

†For comparison, the United States has between 500 to 550 active satellites in orbit and Russia has approximately 130 active satellites in orbit. Jonathan McDowell, “China Satellite Update: 2014,” *Jonathan’s Space Report*, June 2014. <http://planet4589.org/space/papers/china2014.pdf>; Jonathan McDowell (Astrophysicist, Harvard-Smithsonian Center for Astrophysics), e-mail interview with Commission staff, June 15, 2014; and Union of Concerned Scientists, “UCS Satellite Database.” http://www.ucsusa.org/nuclear_weapons_and_global_security/solutions/space-weapons/ucs-satellite-database.html.

ilitates the PLA's ability to project firepower at greater distances and with growing lethality and speed.

China's most important space-based ISR asset is the Yaogan series of advanced electro-optical, synthetic aperture radar, and electronic reconnaissance satellites. Although purportedly civilian in mission, the technical and orbital characteristics of the Yaogan series suggest it is intended to provide overlapping, near-persistent, medium-resolution ISR of military targets,¹⁷² such as U.S. carrier strike groups, as far as China's second island chain.¹⁷³ China to date has launched at least 26 Yaogan satellites, including some that form a constellation similar to the U.S. Navy's state-of-the-art electronic intelligence satellite system, the Naval Ocean Surveillance System.¹⁷⁴ China's Shijian series and Gaofen series of satellites also probably play vital roles in the PLA's ISR infrastructure. The Gaofen series, which was launched in 2013 and ultimately is expected to consist of five to seven satellites, features China's first high-resolution satellites.¹⁷⁵

Regional Satellite Navigation: In December 2012, China's Beidou regional satellite navigation system became fully operational. Using 16 satellites and a network of ground stations, Beidou provides subscribers, including the PLA, with 24-hour regional precision, navigation, and timing services as well as a short messaging service for messages up to 120 characters. The system thus gives China's military an operational alternative to foreign navigation systems, such as Global Positioning System (GPS), for the first time. According to official Chinese press, the PLA already is using Beidou extensively during exercises to track its forces and communicate. Additionally, the availability of Beidou would allow China to attack an adversary's access to GPS or other foreign systems without disrupting the PLA's own capabilities. Beijing plans to expand Beidou to provide global coverage by 2020.¹⁷⁶

Data Relay: In July 2012, China launched a Tianlian data relay satellite into orbit, completing China's first global data relay satellite constellation.¹⁷⁷ As China fields more relay-capable ISR satellites, the Tianlian constellation will enhance the accuracy and timeliness of the PLA's ISR by reducing the time the PLA must wait before receiving intelligence data.¹⁷⁸ Without a data relay system, Chinese satellites must wait until they orbit into view of China before sending ISR information, potentially causing a time lag and thus reducing the PLA's ability to collect time-sensitive intelligence on mobile targets.

Space-Launch Capabilities

China continues to expand and improve its ability to launch civil, military, and commercial satellites, despite enduring technological deficiencies in China's industrial base. China conducted 52 known space launches from 2011–2013, only three less than the United States during this period (see Table 5).¹⁷⁹ China likely will expand its space-based C4ISR architecture with the launch of approximately 35–50 additional satellites through 2015.¹⁸⁰ This growth will be facilitated by planned improvements to China's ground-based space infrastructure and launch vehicles.

Table 5: Chinese versus U.S. Space Launches, 2011–2013

	2011	2012	2013
Chinese Launches (Satellites Deployed)	19 (18)	19 (25)	14 (17)
U.S. Launches (Satellites Deployed)	19 (38)	16 (31)	20 (82)

Source: Jonathan McDowell, “China Satellite Update: 2014,” *Jonathan’s Space Report*, June 2014. <http://planet4589.org/space/papers/china2014.pdf>; Jonathan McDowell (Astrophysicist, Harvard-Smithsonian Center for Astrophysics), e-mail interview with Commission staff, June 15, 2014.

Ground-Based Infrastructure: Space operations require a substantial terrestrial footprint, including launch, telemetry, control, and tracking. China has three dedicated launch sites (Jiuquan, Xichang, and Taiyuan) and plans to open a new space launch facility in Hainan Island, in the southernmost province of China, by the end of 2014.¹⁸¹ This site likely was chosen for its proximity to seaports, the open ocean, and the equator. China also continues to build telemetry, control, and tracking facilities across the nation. Furthermore, because domestic tracking stations are unable to track satellites and manned space vessels around the world, China operates at least three space-tracking naval ships in the Pacific and Indian Oceans (under PLA control) and has established at least five overseas tracking stations in Namibia, Pakistan, Chile, Kenya, and most recently, Australia.¹⁸²

Launch Vehicles: China’s next-generation LM–5 space launch vehicle may conduct its first flight as early as 2015 if China’s space industry is able to overcome challenges to building the vehicle. Once operational, the rocket will more than double the size of payloads China can send into geosynchronous orbit,¹⁸³ allowing it to launch more advanced C4ISR satellites, modules of China’s planned space station, and potentially reusable orbital vehicles.

Furthermore, in September 2013, China launched a satellite using a new solid-fueled orbital launch vehicle called the “Kuaizhou.” China also is developing a second solid-fueled launch vehicle, the LM–11, which China is expected to test launch by as early as the end of 2014. Solid-fueled rockets lack the payload capacity of liquid-fueled rockets but are cheaper, simpler to operate, transportable, and can be released with less preparation. Although Chinese media have highlighted the use of these launch vehicles in “natural disaster monitoring,” China likely is developing the Kuaizhou and LM–11 to put microsattellites* into orbit on short notice. Such a capability would allow the PLA to rapidly replace or augment its satellites in the event of any disruption in coverage during a conflict.¹⁸⁴

*In 2000, China began to launch microsattellites. Although their small size often limits their capabilities, microsattellites are significantly cheaper and easier to develop than larger satellites that serve similar functions. Microsattellites also have lower observable signatures than larger satellites, making them harder for an adversary to track in space. Mark Stokes and Dean Cheng, *China’s Evolving Space Capabilities: Implications for U.S. Interests* (Project 2049 Institute, April 26, 2012), pp. 37–39. http://project2049.net/documents/uscc_china-space-program-report_april-2012.pdf.

Pursuing a Multifaceted Counterspace Program

The PLA is pursuing a broad counterspace program to challenge U.S. information superiority in a conflict and disrupt or destroy U.S. satellites if necessary. Beijing also likely calculates its growing space warfare capabilities will enhance its strategic deterrent as well as allow China to coerce the United States and other countries into not interfering with China militarily.¹⁸⁵

- In July 2013, China launched a LM-4C rocket carrying three satellites, one of which is equipped with a robotic arm for grabbing or capturing items in space.¹⁸⁶ Once in orbit, one of the satellites fired onboard thrusters to adjust its speed and trajectory, and then it passed near two other Chinese satellites in static orbit.¹⁸⁷ Although publicly available information is insufficient to definitely assess the nature of this event, the movement of the satellite and the potential involvement of a satellite equipped with a robotic arm suggest China may have been testing a new space-based counterspace weapon designed to attack satellites in orbit. Co-orbital antisatellite (ASAT) systems can employ multiple attack methods, such as grabbing, damaging, or colliding with another satellite, or jamming or disrupting a target satellite's communication, guidance, or electrical systems.¹⁸⁸
- In May 2013, China fired a rocket into nearly geosynchronous Earth orbit, marking the highest known suborbital launch since the U.S. Gravity Probe A in 1976 and China's highest known suborbital launch to date. Beijing claims the launch was part of a high-altitude scientific experiment; however, available data suggest China was testing the launch vehicle component of a new high-altitude ASAT capability. If true, such a test would signal China's intent to develop an ASAT capability to target satellites in an altitude range that includes GPS and many U.S. military and intelligence satellites.¹⁸⁹
- In 2011, China's unpiloted Shenzhou 8 spacecraft and Tiangong-1 orbiting space lab completed the country's first- and second-ever dockings in orbit. China followed with its first- and second-ever piloted dockings in 2012 and a more advanced piloted docking in 2013.¹⁹⁰ These dockings are significant achievements that will facilitate proximity operations critical for future manned space missions and contribute to the development of ASAT and other military technologies.
- In 2010 and 2013, China carried out its first and second land-based missile intercept tests.¹⁹¹ These tests have not been definitively tied to China's ASAT program but probably were designed to help China assess the performance of homing technologies that it could use to target satellites in low Earth orbit.¹⁹² In July 2014, official U.S. and Chinese sources confirmed China conducted its third land-based missile intercept test. In a statement to *Space News*, a U.S. Department of State spokesperson said, "We call on China to refrain from destabilizing actions—such as the continued development and testing of destructive anti-satellite systems—that threaten the

long term security and sustainability of the outer space environment, on which all nations depend.”¹⁹³

- In January 2007, China destroyed an aging Chinese weather satellite with an ASAT kinetic kill vehicle, demonstrating China’s ability to put at risk satellites in low Earth orbit, such as remote sensing satellites. The impact produced vast amounts of orbital debris, generating worldwide criticism and threatening NASA and international space activities in low Earth orbit.¹⁹⁴
- China likely has developed ground-based satellite communications jammers, which the PLA could potentially employ to degrade or deny U.S. access to some satellite communications and GPS within line of sight of China.¹⁹⁵
- Chinese military doctrine and the integration of cyber operations, electronic warfare, and counterspace reflected in certain Chinese military organizations and research programs suggest the PLA would attempt to conduct computer network attacks against ground-based facilities that interact with U.S. satellite systems.¹⁹⁶

In January 2014, Ashley Tellis, senior associate at the Carnegie Endowment for International Peace, assessed the implications of China’s counterspace program for the House Armed Services Subcommittee on Strategic Forces and the Subcommittee on Seapower and Projection Forces:

The immensity of the burdens associated with securing this information dominance in an era when all U.S. ISR, communications, and other combat support systems will be under persistent attack—even if they are not physically destroyed—cannot be underestimated. Even if Beijing eschews kinetic attacks on U.S. space systems and their ground segments in the early phases of a Chinese counterspace campaign, U.S. military forces will have to apply enormous effort toward: defeating Chinese deception and denial operations; mitigating the Chinese jamming of all critical U.S. space systems to include the Global Positioning System constellation and its terrestrial receivers, space-based synthetic aperture radars, major satellite communication systems, and the links that ensure the effectiveness of the electro-optical and infrared surveillance systems; protecting all satellites from laser dazzling and damage; and, warding off cyber attacks on the space control networks and eventually against the space systems themselves. Thus, even if kinetic attacks against satellites and their ground segments by direct-ascent, co-orbital, nuclear and missile weapons, and special forces are excluded from consideration, the challenges confronting the U.S. military in regard to sustaining the information dominance it has traditionally enjoyed—in the face of current and prospective Chinese counterspace capabilities—will be enormous. Furthermore, given that kinetic counterspace attacks cannot be ruled out at any point in the event of a conflict, the U.S. military will have to simply prepare for all eventualities, irrespective of what Chi-

nese space warfare theorists contend is either plausible or desirable.

The United States is eminently capable of dealing with the threats posed by Chinese counterspace investments through both defensive and offensive counterspace responses of its own, but these will necessarily require significant financial resources if they are to be successfully brought to fruition. . . . Suffice it to say that because protecting U.S. information dominance is vital not only to securing success in war but also to procuring that victory at the lowest cost in terms of lives and effort expended, both the administration and the Congress should not stint in funding all the mitigation efforts required to defeat China's counterspace initiatives—the term “defeat” in this context understood as enabling the U.S. military to successfully complete its missions despite opposition.¹⁹⁷

Later in 2014, General William Shelton (U.S. Air Force), Commander, U.S. Air Force Space Command testified to the Senate Armed Services Subcommittee on Strategic Forces that due to China's investment in counterspace technologies, among other factors, the United States is at a “strategic crossroad in space.” He explained:

In space, our sustained mission success integrating these [satellite] capabilities into our military operations has encouraged potential adversaries to further develop counterspace technologies and attempt to exploit our systems and information. . . . We are so dependent on space these days. We plug into it like a utility. It is always there. Nobody worries about it. . . . You do not even know sometimes that you are touching space. So [to lose U.S. space capabilities] it would be almost a reversion back to . . . industrial-based warfare.¹⁹⁸

Implications for the United States

China's rapid military modernization is altering the military balance of power in the Asia Pacific in ways that could engender destabilizing security competition between other major nearby countries, such as Japan and India, and exacerbate regional hotspots such as Taiwan, the Korean Peninsula, the East China Sea, and the South China Sea.

Moreover, China's growing antiaccess/area denial capabilities increasingly will challenge the ability of the United States to deter regional conflicts, defend longtime regional allies and partners, and maintain open and secure access to the air and maritime commons in the Asia Pacific. While the United States currently has the world's most capable navy, its surface firepower is concentrated in aircraft carrier task forces. China is pursuing a missile-centric strategy with the purpose of holding U.S. aircraft carriers at high risk if they operate in China's near seas and thereby hinder their access to those waters in the event of a crisis. Given China's growing navy and the U.S. Navy's planned decline in the size of its fleet, the balance of power and presence in the region is shifting

in China's direction. By 2020, China could have as many as 351 submarines and missile-equipped surface ships in the Asia Pacific. By comparison, the U.S. Navy, budget permitting, plans to have 67 submarines and surface ships stationed in or forward deployed to region in 2020, a modest increase from 50 in 2014. Furthermore, Frank Kendall, undersecretary of defense for acquisition, technology, and logistics, testified to the House Armed Services Committee in January 2014 that concerning "technological superiority, DoD is being challenged in ways that I have not seen for decades, particularly in the Asia Pacific region. . . . Technological superiority is not assured and we cannot be complacent about our posture."¹⁹⁹ Evan Braden Montgomery, senior fellow at the Center for Strategic and Budgetary Assessments, adds that "because the United States has grown accustomed to opponents that are too weak to seriously threaten its overseas bases, air and naval forces, and information networks, a confrontation with [China] would represent a major departure from the types of conflicts it has fought and prepared for during the unipolar era."²⁰⁰

The United States would need to quickly and safely deploy military forces across great distances during a regional conflict.* This "tyranny of distance" would pose significant challenges to U.S. logistics and C4ISR, potentially exacerbating any U.S. capability and technology gaps. China's large-scale cyber campaign against the United States† could further impede U.S. wartime operations in the Asia Pacific. The Senate Armed Services Committee released a report in September 2014 that provides evidence China is conducting a cyber campaign against the networks of key U.S. Transportation Command contractors.²⁰¹ The nature of this activity and PLA writings suggest the goal of these peacetime cyber intrusions is to enable the PLA during wartime to disrupt U.S. networks, including satellite networks, that support the mobilization and movement of U.S. forces toward China and that link forward-deployed U.S. forces with rear-area command and logistics units.²⁰² The Commission in its 2011 Annual Report highlighted this potential vulnerability when it recommended that "relevant Congressional committees investigate the adequacy of security for the Department of Defense's logistics data system, the time-phased force deployment data system, to ensure that the data therein are secure from cyberattack."²⁰³

Growing Chinese confidence in the PLA's expanding capabilities also increases the risk China's leaders will seek to compensate for declining economic growth and rising social unrest by encouraging and relying on popular nationalism. Promoting a sense of grievance among the Chinese people and creating diversionary tensions in the region would carry real risks of escalation and create the potential for the United States to be drawn into a regional conflict.

Perhaps of even greater concern is the increasing number of opportunities Beijing will have to provoke incidents at sea and in the air that could lead to a crisis or conflict as China's maritime and air forces expand their operations beyond China's immediate pe-

* For context, Taiwan is about 7,000 miles from San Diego.

† For more information on China's cyber operations against the United States, see "China's Cyber Activities" (Chapter 2, Section 2) in the Commission's 2013 Annual Report, and "China's Cyber Activities" (Chapter 2, Section 2) in the Commission's 2012 Annual Report.

riphery. China already has initiated dangerous encounters at sea on several occasions. In December 2013, a U.S. Navy ship was forced to maneuver to avoid a collision with a PLA Navy ship that had intentionally stopped in front of it. Both ships were operating in international waters. Later in 2014, a China Coast Guard ship rammed a Vietnamese coast guard ship following China's placement of a state-owned deep-sea drilling platform inside Vietnam's exclusive economic zone, and a Chinese fighter flew within 30 feet of a U.S. Navy reconnaissance aircraft in international airspace. DoD characterized the latter incident as a "very, very close, very dangerous" intercept that "posed a risk to the safety and well-being of the [U.S.] air crew and was inconsistent with customary international law."²⁰⁴

Regarding crisis management, regional crisis stability mechanisms remain underdeveloped (including U.S.-China mechanisms), and Beijing remains hesitant to invest substantively in mechanisms for incidents at sea and in the air. Although U.S.-China military-to-military ties have increased somewhat during the last two years, Beijing has been reluctant to engage in substantive military diplomacy with the United States.

Based on (1) the changing balance of military power, (2) the continued strength of regional and Chinese nationalism, (3) increasing Chinese assertiveness in the Asia Pacific, and (4) the relatively nascent state of crisis stability mechanisms, the potential for security miscalculation in the region is rising. Regarding conventional deterrence and the regional military balance, U.S. and Chinese analysts likely hold differing beliefs about how a military conflict would conclude and which side would be victorious. As highlighted by RAND's Lloyd Thrall:

Great power warfare, particularly in the air and sea domains, remains rare, and its operational underpinnings are both highly technical and highly secretive. It is therefore unsurprising that the history of great power warfare is fraught with strategic and operational surprise. In practice, confidently calculating the balance of power is a difficult and contingent science; we should acknowledge that the perceptions of military capability and national will underpinning conventional deterrence are likely to differ. As suggested by Pearl Harbor, it is possible for either side to confidently reach wrong conclusions.²⁰⁵

Fundamental U.S. interests are at stake in the evolving geopolitical situation in East Asia and the Western Pacific. China's rise as a major military power in the Asia Pacific challenges decades of air and naval dominance by the United States in a region in which Washington has substantial economic and security interests.

Conclusions

- As a result of China's comprehensive and rapid military modernization, the regional balance of power between China, on the one hand, and the United States and its allies and associates on the other, is shifting in China's direction.

- China's accelerated military modernization program has been enabled by China's rapid economic growth; reliable and generous increases to the People's Liberation Army's (PLA's) budget; gradual improvements to China's defense industrial base; and China's acquisition and assimilation of foreign technologies—especially from Russia, Europe, and the United States—through both purchase and theft.
- Since 2000, China has significantly upgraded the quality of its air and maritime forces as well as expanded the types of platforms it operates. Together with the fielding of robust command, control, communications, computers, intelligence, surveillance and reconnaissance capabilities, these improvements have increased China's ability to challenge the United States and its allies and partners for air and maritime superiority in the Asia Pacific. China's power projection capability will grow rapidly between now and 2020 with the addition of up to approximately 60 new submarines and surface ships; China's first carrier-based aviation wing and second aircraft carrier; and 600 new modern combat aircraft, including China's first fifth-generation fighters.
- After over a decade of research, development, and production, many of China's regional strike capabilities have matured. China's ballistic and cruise missiles have the potential to provide the PLA with a decisive military advantage in the event of a regional conflict and are contributing to a growing imbalance in the regional security dynamic. China now is able to threaten U.S. bases and operating areas throughout the Asia Pacific, including those that it previously could not reach with conventional weapons, such as U.S. forces on Guam.
- China's nuclear force will rapidly expand and modernize over the next five years, providing Beijing with a more extensive range of military and foreign policy options and potentially weakening U.S. extended deterrence, particularly with respect to Japan.
- China is becoming one of the world's preeminent space powers after decades of high prioritization and steady investment from Chinese leaders, indigenous research and development, and a significant effort to acquire and assimilate foreign technologies, especially from the United States. Qualitatively, China now produces near-state-of-the-art space systems for certain applications, such as intelligence, surveillance, and reconnaissance satellites to support China's long-range cruise missiles. Quantitatively, China's numerous active programs continue to increase its inventory of satellites and other space assets.
- Based on the number and diversity of China's existing and developmental counterspace capabilities, China likely will be able to hold at risk U.S. national security satellites in every orbital regime in the next five to ten years.
- Fundamental U.S. interests are at stake in the evolving geopolitical situation in East Asia and the Western Pacific. China's rise as a major military power in the Asia Pacific challenges decades of air and naval dominance by the United States in a region

in which Washington has substantial economic and security interests.

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SECTION 3: CHINA'S DOMESTIC STABILITY

Introduction

Twenty-five years after the Tiananmen Square massacre, many of the same underlying causes of unrest persist today. Land seizures, labor disputes, wide-scale corruption, cultural and religious repression, and environmental degradation have led to hundreds of thousands of localized protests annually throughout China since 2010. The Chinese leadership has consistently responded to increased unrest with repression, censorship, and, occasionally, limited accommodation. Over the past year, ethnic unrest escalated in response to excessive force by China's internal security forces and the growing radicalization of disenfranchised Uyghurs in the Xinjiang Uyghur Autonomous Region. Militant Uyghur separatists also shifted their tactics from attacking Chinese authorities to targeting civilians and public spaces.

President Xi Jinping, like his predecessors, has made the preservation of Chinese Communist Party (CCP) rule and domestic stability his top priorities. He has issued a series of policy directives and institutional changes to centralize the domestic stability maintenance apparatus under his personal oversight and to expand its scope and capabilities.

The growth of Internet connectivity and social media in China has provided Chinese citizens with new tools to express grievances and organize larger, more numerous, and better coordinated protests. To contain this rising threat to authority, President Xi has instituted new constraints on Internet criticism of the CCP, launched high-profile judicial cases against popular online commentators and advocates, and further tightened news media and Internet controls.

This section—based on a Commission hearing in May 2014 on China's domestic stability and briefings by U.S. and foreign government officials and outside experts throughout 2014—examines the economic, political, and social tensions that contribute to unrest in China; China's response to its internal security challenges; and China's use of media and information controls to contain domestic unrest and manage public opinion. The section concludes with a discussion of the implications of China's domestic stability and information controls for the United States.

Unrest in China

Because the Chinese government suppresses information about unrest, official statistics on the number of protests in China are difficult to obtain, dated, and often unreliable.¹ Murray Scot Tanner, senior research scientist at CNA, noted in his written statement at the Commission's May hearing, "In recent years the picture has been harder to track, as Chinese authorities have made it harder

to obtain [this] data, even within their law enforcement system.”² Despite these limitations, a review of information released by China’s Ministry of Public Security (MPS), state-affiliated academic institutions, and official Chinese press reports shows broad trends. Based on figures from the MPS, the number of “mass incidents”* grew in number from 8,700 in 1993 to more than 120,000 in 2008.³ Growth in the number of incidents occurred despite major increases in domestic security budgets and personnel to suppress unrest.⁴ More recent data from state-related academic institutions underscore the high level of unrest. Zhu Lijia, director of the public research department of the Chinese Academy of Governance, stated the number of “mass incidents” doubled from 2006 to reach 180,000 in 2010.⁵ In 2012, the Chinese Academy of Social Sciences found “mass incidents” regularly exceed 100,000 per year.⁶ Based on data of other social unrest indicators from the MPS, Dr. Tanner found that after a sustained increase of two decades, unrest remains at a high level but “may have plateaued somewhat in the past 3–4 years.”⁷

Restrictions on Protests in China

In response to domestic unrest, local governments employ a mixture of repression and concessions. The Chinese government suppresses public protests and dissent through use of internal security forces, legal and extralegal measures, and censorship. (For more information on these measures, see “China’s Responses to Unrest” later in this section). Local governments also use direct bargaining, co-optation of protest leaders and participants, and bureaucratic measures such as the imposition of excessive paperwork to register protests.⁸ Since 2008, local governments increasingly buy stability through cash payments to protestors and employment opportunities for protest leaders.⁹ As a result of local governments’ suppression of unrest and concessionary tactics, “an estimated 80 percent of incidents of large scale unrest from 1995 to 2006 were resolved entirely at the subnational level,” Steve Hess, assistant professor of political science at University of Bridgeport, told the Commission at its May hearing.¹⁰

Protests in China

Most “mass incidents” remain local, issue-specific, and temporary forms of unrest. According to Dr. Hess, “these actions are: framed around material and issue-specific grievances; lack broad and coordinated coalitions of social actors who are based in diverse societal and economic sectors and geographic localities; and target particular local officials.”¹¹

Lawsuits and petitioning are two official channels for Chinese citizens to redress grievances, but these efforts are largely unsuccessful. Public interest lawyers have cited laws and regulations to

*The term “mass incidents” was coined in 2005 by Zhou Yongkang, then Minister of Public Security, as “any kind of planned or impromptu gathering that forms because of ‘internal contradictions,’ including mass public speeches, physical conflicts, airing of grievances or other forms of group behavior that may disrupt social stability.” This broad definition varies across provinces and incorporates sit-ins, strikes, marches, and rallies, participation in cults or organized crime, and gambling, among other things. Will Freeman, “The Accuracy of China’s ‘Mass Incidents,’” *Financial Times*, March 2, 2010. <http://www.ft.com/intl/cms/s/0/9ee6fa64-25b5-11df-9bd3-00144feab49a.html#axzz30qzHoNaC>; EastSouthWestNorth, “Statistics of Mass Incidents,” http://www.zonaeuropa.com/20061115_1.htm.

advocate for deeper changes in the legal system and strengthen citizens' rights.¹² Here, too, success is limited. In the few trials that have occurred, local CCP officials with interests in the outcome of a particular case often advised the presiding judge on the trial's verdict.¹³

Official petitioning, derived from Chinese Imperial rule, provides citizens an avenue to register formal complaints through local petition offices. However, local officials are at times the offending party or complicit with the offender. In response, petitioners often attempt to appeal to national authorities in Beijing, but local officials, whose career advancement in the CCP partly depends on their record promoting domestic stability, often detain citizens in "black jails"* before they can reach central government officials.¹⁴ In April 2014, the Chinese government announced changes to the national petitioning system to ban non-Beijing residents from submitting petitions to Beijing. This ban restricts one of the main channels petitioners use to seek redress and may further increase frustration.†

The lack of satisfactory channels for redress has led some disgruntled citizens to take direct action against local government officials. Chinese citizens are increasingly organizing larger, more numerous, and better coordinated demonstrations, sometimes involving tens of thousands of protesters. According to Xi Chen, political science professor at the University of North Carolina, these dissatisfied citizens have been able to extract gains from the government by using "troublemaking" tactics: gathering in large numbers, disrupting government operations, marching, conducting sit-ins, and displaying banners with slogans.¹⁵ The success of these tactics remains dependent on the publicity and size of the demonstration, resulting in the common maxim, "Big disturbance, big resolution; small disturbance, small resolution; no disturbance, no resolution."¹⁶

The growth in Internet connectivity and social media has provided dissatisfied citizens a new organizational tool and venue for airing grievances to a broader audience.¹⁷ Social media lowers organizational and communication costs, accelerates transmission of information, and broadens disgruntled citizens' exposure to information outside of official state media channels while expanding their reach.¹⁸ In January 2013, a report by the state-run *Legal Daily* ‡ found that citizens used Weibo,§ a social media tool, to organize protests in approximately 13 percent of "mass incidents" in 2012.¹⁹ In March 2014, citizens harnessed social media to call attention to protests, involving more than 10,000 people, over the expansion of a paraxylene (PX) ¶ factory in Maoming, Guangdong

*Black jails are unofficial detention centers used to house individuals, mainly petitioners, indefinitely without trial. Human Rights Watch, "An Alley in Hell: China's Abusive 'Black Jails,'" November 2009. www.hrw.org/sites/default/files/reports/china1109web_1.pdf.

† In April 2014, another change to the petition system included the promise of an online petition system by the end of 2014, but similar efforts in recent years have failed. Xinhua (English edition), "China to Build National Online Petitioning System," http://news.xinhuanet.com/english/china/2014-04/11/c_133255772.htm.

‡ The *Legal Daily* is under the CCP's Central Politics and Law Commission.

§ Weibo, a microblogging service launched by Sina in August 2009, was one of the first major social media platforms in China.

¶ Paraxylene is a chemical used in manufacturing plastic bottles and polyester clothing. The U.S. Environmental Protection Agency found that long-term exposure to paraxylene can harm the respiratory, cardiovascular, kidney, and central nervous systems. Chevron Phillips, "Paraxy-

Province, and subsequent violent crackdown.²⁰ Although eventually censored, posts of the Maoming protests became one of the most discussed topics on social media, leading to smaller sympathetic protests in other cities in Guangdong.²¹

The ability to translate online dissent into action remains limited by citizens' unwillingness to risk their job, family, or personal safety to protest. Gao Zhisheng, a human rights lawyer who China's Ministry of Justice named one of the top ten Chinese lawyers in 2001, was recently released from a nine-year jail sentence, where he faced torture, solitary confinement, and malnutrition, for advocating on behalf of Falun Gong practitioners.²² In addition, authorities threatened his children, leading him to confess to subversion charges in 2006; authorities harassed and kept him and his family under 24-hour surveillance until his family's escape to the United States in 2009.²³

The Chinese leadership still fears the potential for a sudden national movement and closely monitors and censors social media and the Internet (see "Internet and Social Media Censorship Controls" later in this section). The recent crackdown on Chinese citizens' pro-democracy remarks and online support for protests in Hong Kong, known as the Umbrella Revolution, demonstrates the CCP's concern.²⁴ Social media and Internet monitoring provides the Chinese government with the identity, location, and network of activist citizens and the leadership of any movement.²⁵ More recently, the Chinese government reportedly released a sophisticated phishing attack through a fake application to gain access to Hong Kong protestors' personal data, phone calls, messages, and location.²⁶

Protestors who express pro-democracy sentiments, share strategies, or attempt to organize demonstrations outside of local or provincial jurisdictions face censorship, arrest, and imprisonment. For example, the Chinese government detained Zhang Zhiru, a prominent Chinese labor activist, for attempting to assist striking workers at Yue Yuen Industrial Holdings, and arrested his colleague, Lin Dong, for communicating with Yue Yuen workers about another strike through QQ, one of China's most popular instant messaging services.²⁷

Underlying Causes of Unrest

Following the Tiananmen Square massacre, the CCP made an implied "grand bargain" with its citizens to reestablish its legitimacy—economic development and a higher quality of life in exchange for relinquishing political freedom.²⁸ Since then, the Party has sought to institutionalize this bargain through policies focused on driving economic growth and a patriotic education campaign.* In the last year, several high-level officials have reiterated the CCP's central role in government. President Xi cautioned that China should not pursue alternative government structures "be-

lene," <http://www.epchem.com/bl/aromatics/en-us/Pages/Paraxylene.aspx>; U.S. Environmental Protection Agency, "Xylenes (A) (Mixed Isomers)," Technology Transfer Network—Air Toxics website, January 2000. <http://www.epa.gov/ttn/atw/hlthef/xylenes.html>.

* Launched in 1992, this campaign promotes the uniqueness and legitimacy of China's political system; the historical links between pre-communist rule under the Qing Dynasty and current CCP rule; the CCP as the defender of China's national interests; and national unity against ethnic nationalism.

cause it would not fit us and it might even lead to catastrophic consequences.”²⁹

High economic growth rates since the 1980s have raised more than 600 million Chinese citizens out of poverty.³⁰ This rapid economic growth has contributed to a burgeoning and more mobile middle class, an increasingly active and educated young population, and rising public expectations for enhanced quality of life and employment. Simultaneously, China’s changing demographic composition and aging labor force are placing strains on workers, employers, families, and the economy.

Heightened public awareness combined with the growth of Internet connectivity has spurred demonstrations seeking fair compensation for seized land, enforcement of basic labor rights and safe working conditions, equal access to government services, and greater ability to worship. In addition, understanding of the public health risks from severe pollution has contributed to the recent growth in environmental protests. Pervasive corruption exacerbates these concerns.

Although estimates differ, Chinese academics and the U.S. government agree that the two most common causes of “mass incidents” are disputes over labor and land.³¹ Based on a review of media reports, the U.S. government’s Open Source Center found land and labor disputes accounted for 46 percent of publicly reported “mass incidents” in 2013 and 52 percent in the first half of 2014.*³² A 2014 report by the Chinese Academy of Social Sciences similarly found labor disputes and land seizures were the largest causes of “mass incidents”† from January 2000 to September 2013.³³

Demographic Challenges

China’s one-child policy that was enacted a generation ago has resulted in a rapid drop in birth rates and the appearance of a new family structure. The “4–2–1” families—consisting of four grandparents, two parents, and one child—have contributed to a rise in household spending on education.³⁴ This family structure, along with insufficient social safety nets, shifts financial burdens eventually to the youngest generation to support their retired parents and grandparents.³⁵ By 2050, approximately a third of China’s population will be 60 years or older—compared with 27 percent in the United States.³⁶ In addition, the one-child policy has distorted gender ratios as Chinese mothers have decided to carry more males than females to full term. By 2020, China will have 30 million more men than women.³⁷ This excess of young, unmarried men has contributed to increases in crime, prostitution, mail-order marriages, and human trafficking.³⁸

Finally, the emergence of a middle class over the last two decades has resulted in more voices pushing for clean air and water, safe food and drugs, and better employment for their children.³⁹ Grandparents and parents have heavily invested in their children’s

* Open Source Center figures underestimate the scale of unrest because “mass incidents” in China are largely unreported in rural areas and censored by local governments. Despite this limitation, the similar findings of both the Open Source Center and Chinese Academy of Social Sciences suggest broad trends.

† In this particular report, “mass incidents” were defined as protests involving more than 100 people.

education over the last ten years, creating a more educated and skilled workforce. The number of university graduates grew from less than a million in 1999 to nearly 7 million in 2014.⁴⁰ At the same time, the job market for these aspirants has not kept pace with this shift, creating a glut of low-income university graduates. Too proud or embarrassed to work in factories, these graduates face higher unemployment and lower wage growth than migrants.⁴¹ A 2014 Peking University survey found more than one-third of recent Chinese graduates rely on their parents for financial support after graduation.⁴²

In part to address these issues, the CCP pledged to relax China's one-child policy in the Third Plenum of the 18th CCP Central Committee in November 2013 and allow select families to have a second child.⁴³ However, relaxation of the one-child policy is a long-term solution and will not address the near-term financial burdens of an aging population.

Land Seizures

Compulsory seizures or acquisitions of land remains one of the most common and contentious sources of unrest. Throughout the country, localized disputes occur over inadequate compensation, forced demolition of ancestral homes, and the diversion of money into the pockets of local officials. Land disputes accounted for roughly 25 percent of unrest between January 2013 and June 2014, according to Open Source Center analysis of Chinese and overseas Chinese media.⁴⁴ Local governments under the guise of furthering economic development seize land at reduced prices and then resell at a higher rate to factory owners or real estate developers. The price difference is either skimmed by local officials or directed into the local government's treasury.⁴⁵ These sales generate roughly 60 percent of local government budgets.⁴⁶ According to the 2010 Nationwide Survey on Rural Land Rights, farmers were unsatisfied in 58 percent of reported land seizures due to low compensation or an unfair process.* These seizures occurred despite a central government policy that no overall reduction of agricultural land is allowed and compensation to farmers is to be fair and equitable. A 2014 report by the World Bank found that farmers' compensation was generally 15 to 20 percent of the market price.⁴⁷ Despite attempts by the central government to rein in these seizures through audits and directives, land sales grew 45 percent between 2012 and 2013, reaching an estimated renminbi (RMB) 4 trillion (approximately \$645 billion).⁴⁸ A 2014 report by the Central Commission for Discipline Inspection (CCDI), the CCP's anticorruption agency, found illegal land seizures and real estate corruption in 20 of the 21 provinces visited, accounting for 95 percent of all inspections.⁴⁹

Labor Disputes

Independent labor unions, which might be expected to advocate on behalf of workers and farmers, do not exist in China. Weak enforcement of basic rights and safe working conditions, the absence

* This survey, conducted by Landesa, China Renmin University, and Michigan State University, interviewed 1,564 rural households in 17 major agricultural provinces. Jeffrey Riedinger and Zhu Keliang, *Chinese Farmers' Land Rights at the Crossroads—Findings and Implications from a 2010 Nationwide Survey* (World Bank, April 18, 2011). <http://siteresources.worldbank.org/INTIE/Images/475494-1294353056366/ZhuLandRightsPres4.pdf>.

of collective bargaining and freedom of association, and the inaction of the state-run All-China Federation of Trade Unions (ACFTU) have fostered worker unrest in China.⁵⁰ Chinese workers remain largely unable to resolve disputes with employers over low compensation, wage and benefit arrears, factory closures or relocations, and poor working conditions.⁵¹ Migrants from rural areas are particularly vulnerable to exploitation.⁵² The ACFTU, an organization under direct CCP control, oversees all representational activity. Workers and most labor experts view the ACFTU as largely ineffective in representing workers' grievances due to appointment of ACFTU officials by employers and strong CCP control.⁵³ Attempts to organize outside of the ACFTU are largely suppressed.⁵⁴ Local governments are reluctant to step in to protect workers' rights, which could impact economic growth, employment, and investment.⁵⁵ As a result, local governments force negotiated settlements through a mixture of threats of imprisonment,* detention,† or violence.⁵⁶ The China Labor Bulletin, a Hong Kong-based nongovernmental labor rights organization, found that police intervened in approximately 20 percent of the 1,171 recorded wildcat strikes and protests between January 2012 and December 2013, with a noticeable increase in the second half of 2013.⁵⁷ Negotiated settlements generally improve compensation for workers but provide little protection for strike leaders, who are generally sacked shortly after the dispute is settled.⁵⁸

Despite tight restrictions, Chinese workers have increasingly held strikes and protests, emboldened by their ability to harness social media and the passage of labor-related legislation in 2008 and 2010.⁵⁹ Social media provides a new tool to mobilize and share information on employment conditions and opportunities, allowing workers to compare their conditions and to pursue higher wages.⁶⁰ Public debates prior to the passage of legislation in 2008 and 2010 educated the labor force on their legal rights.⁶¹ Furthermore, growing labor shortages caused by the decline in the absolute number of working-age people in China since 2012 have strengthened workers' bargaining power.⁶² As a result, the number of labor disputes reported by the Chinese government increased 50 percent since 2008 (see Figure 1).⁶³ In April 2014, 40,000 workers at Yue Yuen Industrial Holdings, a supplier for Nike, Adidas, and other international companies, held a two-week strike over retirement benefits and low wages, representing one of the largest labor protests since the 1970s.⁶⁴ While these protests are generally unsuccessful,‡ continued labor shortages, soaring living costs, and expectations for

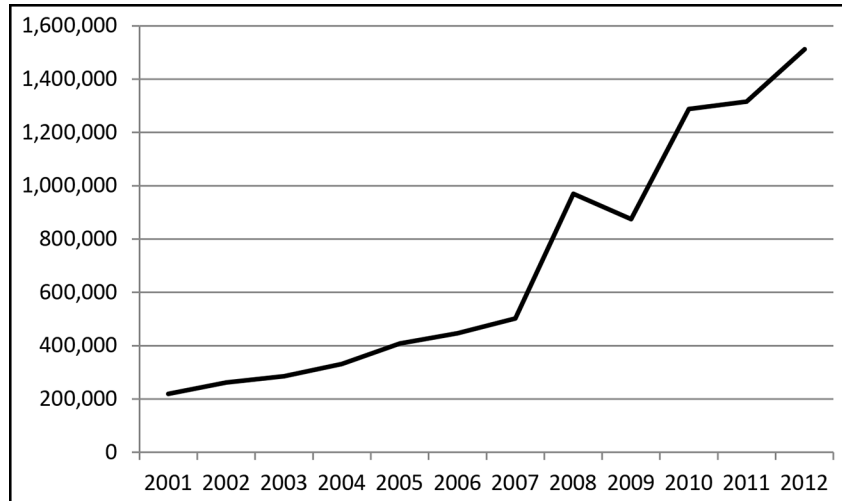
* Strikers can face up to five years of imprisonment for having "disturbed social order." Tom Mitchell and Demetri Sevastopulo, "China Labor Activism: Crossing the Line," *Financial Times*, May 7, 2014. <http://www.ft.com/intl/cms/s/0/bb0f1c3a-c953-11e3-99cc-00144feabdc0.html#axzz3CpfayWjq>; China Labor Bulletin, "Labor Activist Wu Guijun Detained for One Year: China's Workers More Determined Than Ever," May 23, 2014. <http://www.clb.org.hk/en/content/labour-activist-wu-guijun-detained-one-year-china%E2%80%99s-workers-more-determined-ever>.

† For example, the Chinese government detained Wu Guijun for a year after his involvement in leading a mass protest in Shenzhen over compensation regarding the relocation of a foreign-owned factory. Geoffrey Crothall, "In China, Labor Activism Is Waking Up," *South China Morning Post* (Hong Kong), May 1, 2014. <http://www.scmp.com/comment/insight-opinion/article/1500831/china-labour-activism-waking>.

‡ The China Labor Bulletin estimates that of the estimated 1,515 strikes and protests between January 2011 and August 2014, only 5 percent were successful. China Labor Bulletin, "Strike Database," <http://www.numble.com/PHP/mysql/clbmap.html>.

enhanced retirement benefits as the first wave of migrant workers reaches middle age could spur more disputes.⁶⁵

Figure 1: Total Labor Disputes Handled in China, 2001–2012



Source: Mary Gallagher, “China’s Workers Movement and the End of the Rapid-Growth Era,” *Daedalus* 143:2 (Spring 2014): 81–95.

Rural-Urban Divide

China is undergoing the world’s largest rural to urban migration, placing further strains on families. Over the last three decades, 260 million migrants have moved from rural to urban areas, responding, in part, to government programs that seek to boost growth through urbanization.⁶⁶ However, cities have not developed programs to care for the new city-dwellers due to China’s residency permit system, the *hukou*.^{*} The *hukou* system is hereditary and establishes eligibility for employment opportunities, compensation, and access to government services such as education, healthcare, and housing. Changing the location of one’s *hukou* is very difficult, thereby linking migrants perpetually to the rural areas from which they originated.⁶⁷ Currently, 54 percent of China’s population resides in urban areas but only 36 percent of the population has an urban residency permit.⁶⁸ Urban residents without a permit have limited access to government services, creating a permanent underclass and worsening the rural-urban divide. In some cases, children are left with grandparents or on their own as their parents live and work far away.⁶⁹

Then President Hu Jintao aggressively sought to reduce this rural-urban divide and increase economic opportunities by shifting economic development to inland provinces, eliminating the agricultural tax for farmers, building rural health clinics and subsidized

^{*}For more information on the *hukou* system, see U.S.-China Economic and Security Review Commission, Chapter 2, Section 5, “China’s Internal Dilemmas,” *2011 Annual Report to Congress*, November 2011, pp. 115–119.

housing, and supporting more lenient policies toward migrant workers.⁷⁰ For example, the Chinese government made significant strides in reducing the healthcare disparity between rural and urban areas, but the government has not been able to overcome soaring medical costs and overcrowding at large hospitals. (For more information, see Chapter 1, Section 3, “China’s Health Care Industry, Drug Safety, and Market Access for U.S. Medical Goods and Services.”) In July, the Chinese government under the leadership of President Xi issued a proposal to loosen *hukou* restrictions with a goal of reallocating 100 million rural residents to urban areas by 2020.⁷¹ But the plan faces pushback from municipal governments and urban residents, who are concerned over an erosion of service quality and additional costs from an influx of millions of migrants into the system.⁷²

Religious Repression

Since its inception in 1999, the U.S. Commission on International Religious Freedom has found systematic and egregious violations of religious freedom in China.⁷³ The Chinese government maintains tight restrictions on Islam, Tibetan Buddhism, Falun Gong, Catholicism and Protestantism, through harassing leaders, arresting and detaining practitioners, destroying property, and restricting the dissemination of religious materials.⁷⁴ In May 2014, China’s first national security “blue book” * designated religion as a serious threat to its national security.

Islam: In Xinjiang, Chinese officials regulate the appointment of religious leaders, conduct surveillance of mosques and practitioners,[†] and detain and arrest practitioners. They also restrict overseas pilgrimages, forbid the observance of Ramadan,[‡] and prohibit minors from entering mosques.⁷⁵ In 2014, the Chinese government strengthened its ban on men growing long beards, women wearing face-covering veils, and the education of children in religious schools.⁷⁶ Since August, the CCP has claimed that it “rescued” nearly 300 children from religious education and detained at least 85 people in connection with the religious schools.⁷⁷

Tibetan Buddhism: The Chinese government maintains sole authority for the selection and education of Tibetan Buddhist lamas, regularly denigrates the Dalai Lama, Tibet’s spiritual leader, ar-

*The “blue book” outlined four major national security threats: Western democratic values, Western cultural hegemony, information inflows through cyberspace and the foreign media, and underground religious activities. Lanxin Xiang, “China’s National Security Blue Paper a Worrying Throwback to the Cold War.” *South China Morning Post* (Hong Kong), May 20, 2014. <http://www.scmp.com/comment/article/1516132/chinas-national-security-blue-paper-worrying-throwback-cold-war>.

† In Kashgar prefecture, Chinese officials maintained registrations of Muslim households with detailed information on their religious behaviors, start of Quran instruction, and dress, such as whether women wear veils. Qiao Long, “China Registering the Religious in Xinjiang.” *Radio Free Asia*, May 2, 2013. <http://www.rfa.org/english/news/uyghur/registration-05022013112851.html>; Congressional Executive Commission on China, *2013 Annual Report to Congress*, October 10, 2013.

‡ The Chinese government compels Party members, civil servants, students, and teachers not to observe Ramadan by threatening to expel or dismiss violators. To ensure compliance, the Chinese government required them to eat instead of fasting in front of colleagues and classmates and scheduled classes or work during Friday prayers. Simon Denyer, “China’s Clampdown on Islam Stokes Resentment and Violence.” *Washington Post*, September 20, 2014. http://www.washingtonpost.com/world/chinas-war-on-terror-becomes-all-out-attack-on-islam-in-xinjiang/2014/09/19/5c5840a4-1aa7-4bb6-bc63-69f6bfa07e9_story.html.

rests and detains practitioners, and restricts overseas travel and observance of religious festivals or ceremonies.⁷⁸ In addition, the Chinese government interferes with Tibetan Buddhist religious study to include: assigning government and CCP officials to monastery management, locating police stations or security offices on or near monasteries, restricting movement of nuns and monks between monasteries,* and forcing participation in “patriotic education”† campaigns.⁷⁹

Falun Gong: The Chinese government maintains a nationwide campaign‡ to curb the growth of the Falun Gong, a meditation-based spiritual movement, through arbitrary detention, torture, psychiatric abuse, and arrest of practitioners as well as harassment of lawyers who attempt to represent them.⁸⁰

Christianity: In the last year, the Chinese government implemented more restrictions on Christianity, which it had previously tolerated through informal understandings and self-censorship between officials and practitioners.⁸¹ Estimates in 2011 placed the number of Christians in China at 60 million with the largest Christian concentrations in Anhui, Fujian, Henan, Jiangsu, and Zhejiang provinces.⁸² In April, Professor Fenggang Yang at Purdue University claimed the number of Christians in China will reach 247 million by 2030, making it the largest Christian population in the world.⁸³ The Chinese government has sought to rein in the public profile and growth of Christianity since early 2014 by demolishing 163 churches and removing crosses or other signs of Christian faith in Zhejiang Province.§⁸⁴ Catholics have reported church demolitions in Anhui and Henan provinces.⁸⁵ In August, the State Administration for Religious Affairs announced that it will construct its own Christian belief system to “adapt to China’s national condition and integrate with Chinese culture.”⁸⁶ With the rapid growth of Christianity in China, standoffs between practitioners and officials likely will increase.

*A cornerstone of Tibetan Buddhist religious education is receiving training from theological experts in various monasteries and religious sites, but restrictions on movement limit the quality and continuity of monastic study.

†“Patriotic education” in Tibet involves the denunciation of the Dalai Lama, support of the CCP leadership and the socialist system, and allegiance to the 11th Panchen Lama, who is recognized by the Chinese government but unapproved by the Dalai Lama. Bureau of Democracy, Human Rights, and Labor, *International Religious Freedom Report for 2013*, U.S. State Department, July 28, 2014. <http://www.state.gov/j/drl/rls/irf/religiousfreedom/index.htm#wrapper>.

‡In 1999, following a large-scale protest involving 10,000 participants in Tiananmen Square over harassment of practitioners, the Chinese government launched a nationwide campaign against the Falun Gong, labeling the Falun Gong as an ‘evil cult’ in July 1999 and arresting more than 30,000 Falun Gong practitioners by 2001. John Pomfret and Michael Laris, “China Outlaws Nonconformist Spiritual Sect,” *Washington Post*, July 23, 1999. <http://www.washingtonpost.com/up-srv/inatl/longterm/china/stories/sect072399.htm>; Adam Brookes, “Falun Gong: Living in Fear,” *BBC*, April 26, 2000. <http://news.bbc.co.uk/2/hi/asia-pacific/726895.stm>.

§Zhejiang province is a center for Christianity in China. In Wenzhou, a city known as “China’s Jerusalem,” Christians make up approximately 15 percent of the 9 million inhabitants. Andrew Jacobs, “China Moves Against 2 Churches in Campaign against Christianity,” *New York Times*, July 28, 2014. <http://www.nytimes.com/2014/07/29/world/asia/china-moves-against-2-churches-in-campaign-against-christianity.html>; China Aid Association, “Updated: China Aid Received Compilation of Persecuted Zhejiang Churches,” *China Aid News*, July 14, 2014. <http://www.chinaaid.org/2014/05/china-aid-receives-compilation-of-64.html>; and Brice Pedroletti, “China’s Christians Fear New Persecution after Latest Wave of Church Demolitions,” *Guardian*, July 4, 2014. <http://www.theguardian.com/world/2014/jul/05/china-christianity-wenzhou-zhejiang-churches>.

Environmental and Health Concerns

Greater public awareness of the effects of severe environmental degradation and threats to public health from food and pharmaceutical impurities has led Chinese citizens to demand greater governmental action. Recent official reports, including the first nationwide survey on soil pollution, found that one-fifth of China's arable land and 60 percent of the country's water is polluted.⁸⁷ The Yale 2014 Environmental Performance Index found Chinese citizens' exposure to fine particulate matter (PM2.5)* the highest in the world, ranking last in a list of 178 countries.⁸⁸ Furthermore, the Ministry of Environmental Protection found that only 9 out of 161 cities met the new urban air quality standards for the first half of 2014.⁸⁹ This degradation contaminates land, water, and air, posing significant health risks for Chinese citizens. (For an in-depth background on food and health safety challenges in China, see Chapter 1, Section 3, "China's Healthcare Industry, Drug Safety, and Market Access for U.S. Medical Goods and Services.")

Public alarm over these health risks and ineffective mechanisms to address these concerns has led to online activism and large-scale protests involving thousands of participants from various socioeconomic classes. The Open Source Center found that the number of environmental protests grew from at least 47 incidents in 2013 to 72 incidents in just the first half of 2014.⁹⁰ This increase is partially attributed to a series of environmental protests† against construction of PX factories.‡

Public anger at hazardous levels of air pollution reached a tipping point in 2013 and forced the Chinese government to dedicate additional resources and to allow wider coverage of the issue by official media.⁹¹ The 12th Five-Year Plan on Environmental Protection allocated RMB 3.4 trillion (approximately \$546.3 billion) for environmental protection, and the State Council dedicated RMB 1.7 trillion (nearly \$277 billion) to reduce air pollution by 2017.⁹² Furthermore, Premier Li Keqiang "declared war" on pollution in March 2014 at the National People's Congress.⁹³ In April, the National People's Congress passed amendments to the Environmental Protection Law, which increase penalties for violations, strengthen environmental agencies' enforcement capability, and hold local governments accountable for their jurisdiction's environmental quality.⁹⁴

However, environmental and health damage will remain an issue due to lax enforcement and restrictions on the creation of cross-provincial or national environmental nongovernmental organizations (NGOs).⁹⁵ Local officials are reluctant to implement environmental laws and regulations that reduce economic growth or otherwise hinder officials' promotion prospects within the CCP.⁹⁶ In addition,

*PM2.5 is made up of metal, organic chemical, acid, soil or dust, and allergen particulates measuring 2.5 micrometers or smaller in diameter. Excessive exposure to PM2.5 aggravates existing heart and lung disease and is linked to higher incidences of heart attacks, asthma attacks, and bronchitis. U.S. Environmental Protection Agency, "Basic Information," <http://www.epa.gov/airquality/particlepollution/designations/basicinfo.htm>.

† Protests against the construction of PX factories have occurred in Xiamen in 2007, Dalian in 2011, Ningbo in 2012, Kunming in 2013, Pengzhou in 2013, and Maoming in 2014.

‡ These figures are based on limited Chinese, Hong Kong, and other media reporting, which likely underestimate the scale of environmental protests in China due to censorship and the remote location of such protests. Open Source Center, *China: Anti-PX Protests Raise Social Tension, Impede PX Production*, April 16, 2014. ID: CHR2014041629988268.

local environmental regulators not only lack significant personnel and financial resources but also rely on local governments rather than the Ministry of Environmental Protection for funding, thus creating a weak regulatory system vulnerable to political pressure.⁹⁷ Citizens who attempt to increase public oversight of polluting firms risk harassment or arrest.⁹⁸ Furthermore, restrictions on registering and funding NGOs hamper the development of national or regional environmental NGOs, limiting the ability of the public to challenge vested state and industry interests.⁹⁹

Wide-Scale Corruption

Wide-scale corruption continues to erode the CCP's legitimacy to its citizens. Small-scale profiteering has been augmented by the exploitation of critical economic factors such as land, promotions, investment funds, loans, permits, and construction. This profiteering is increasingly seeping into everyday life for Chinese citizens. Bribes are becoming a prerequisite for access to social services, entry into the best schools, and care in public hospitals. In Beijing, the best public education costs more than double the average annual salary—despite regulations guaranteeing free public education.¹⁰⁰ The frequency of embezzlement and bribes in new infrastructure projects has resulted in poor construction.* According to a statement by Qiu Baoxing, vice minister of the Ministry of Housing and Urban-Rural Development, in 2010, the average life expectancy † of a Chinese building is 25–30 years compared with 74 years in the United States.¹⁰¹ Furthermore, increases in defense spending have created more opportunities for illicit activity by military units responsible for procurement, logistics, and fiscal management.¹⁰²

Patronage within the military has become institutionalized with lower level officials providing gifts and business deals to higher level officials in return for promotions and assignments.¹⁰³ In 2014, recruits generally paid between RMB 50,000 and 100,000 (roughly \$8,000 to \$16,000), depending on their family's connections, to ensure an entry-level position in the People's Liberation Army that paid an annual salary of around RMB 20,000 (approximately \$3,000).¹⁰⁴ Consideration for higher level positions requires bribes worth hundreds of thousands of dollars.¹⁰⁵ Once in these higher level positions, officials expect to receive millions of dollars in bribes for promotions and appointments of subordinates, kickbacks from procurement, and the embezzlement of public funds.¹⁰⁶ Xu Caihou, former vice chairman of the Central Military Commission, reportedly received RMB 35 million (an estimated \$6 million) for promotions from his subordinate Gu Junshan, then People's Liberation Army deputy logistics chief.¹⁰⁷ Gu Junshan benefited from these promotions, receiving RMB 120 billion (roughly \$20 billion)

* Shoddy construction contributed to the collapse of school buildings that killed 20,000 children in the 2008 Sichuan earthquake, a major railway crash in 2011, and the collapse of at least six bridges from 2011–2012. Eve Cary, "China's Dangerous Tofu Projects," *Diplomat*, February 10, 2012. <http://thediplomat.com/2012/02/chinas-dangerous-tofu-projects/>; Jacey Fortin, "Bridges Falling Down—China's Embarrassing Infrastructure Problem," *International Business Times*, August 24, 2012. <http://www.ibtimes.com/bridges-falling-down-chinas-embarrassing-infrastructure-problem-757205>.

† Building life expectancy "refers to the durability of housing without substantial renovation." China Economic Review, "China's Housing Sector Is Crumbling—Literally," April 21, 2014. <http://www.chinaeconomicreview.com/china-housing-shoddy-building-quality-energy-incentives-GDP>.

in kickbacks for selling military-owned land in Shanghai for commercial development and distributing more than 400 homes, including more than 10 apartments in an expensive neighborhood in Beijing, as gifts to friends and allies.¹⁰⁸

In response, President Xi launched an anticorruption campaign shortly after taking office in 2012. Although leadership transitions in the past have often led to anticorruption crackdowns, recent developments demonstrate that President Xi's campaign is wider in breadth and larger in scope than previous campaigns in the last three decades.¹⁰⁹ In 2013, 182,000 party officials of the roughly 80 million CCP members were investigated.* In 2014, the CCDI more aggressively expanded investigations. From January to May 2014, the CCDI disciplined nearly 63,000 officials, a 35 percent year-on-year increase.¹¹⁰

'Fire Chief Wang'— Leading China's Anticorruption Campaign

At the helm of Xi Jinping's anticorruption campaign is the head of the CCP CCDI and member of the Politburo Standing Committee, Wang Qishan. Known colloquially in China as "Fire Chief Wang" for his frequent role as crisis manager, Wang holds a reputation in China "as a leader who is capable and trustworthy."¹¹¹ For example, in 2004, Wang was appointed to serve as mayor of Beijing to help address the severe acute respiratory syndrome (SARS) crisis.¹¹²

Wang's background indicates he is a powerful figure aligned with President Xi. Cheng Li, director of the John L. Thornton China Center at The Brookings Institution, estimates that Wang is the second most powerful figure in China after Xi Jinping.¹¹³ Li notes that Wang Qishan and Xi Jinping have been close friends for over 40 years. The two were classmates and study partners as early as 1979.¹¹⁴ In terms of Wang's politics, Brookings' biography of Wang describes him as "likely [to] promote the development of foreign investment and trade, the liberalization of China's financial system, and tax-revenue reforms."¹¹⁵ Brookings' analysis cites Wang's leadership roles in key Chinese banks and financial regulatory bodies prior to and during the 1997 Asian financial crisis. Wang served as vice governor of the People's Bank of China (PBOC) and governor of China's Construction Bank. From 2000 to 2003, Wang also served as the director of the State Council General Office of Economic Reform.¹¹⁶

*To put the anticorruption campaign in context, of the 5,000 officials ranked vice minister or above only 35 have been arrested, representing 0.7 percent of high-ranking officials. Cheng Li and Tom Orlik, "China's Corruption Crackdown More Than Factional Politics, Says Cheng Li," *Bloomberg Brief*, July 31, 2014. <http://www.brookings.edu/~media/research/files/interviews/2014/07/31%20china%20corruption%20crackdown%20li/brief%20cheng%20li.pdf>; Lingling Wei and Bob Davis, "China's Top Graft Buster, Wang Qishan, Probing Thousands," *Wall Street Journal*, August 20, 2014. <http://online.wsj.com/articles/chinas-top-graft-buster-probing-thousands-1408588202>.

**‘Fire Chief Wang’—
Leading China’s Anticorruption Campaign—Continued**

During his administration of the CCDI, Wang has shown that the current leadership in China is serious about cracking down on corruption, at least among Xi’s political enemies. In what was considered his boldest move, Wang successfully proposed a controversial policy to allow investigation of current and retired members of the Politburo Standing Committee.¹¹⁷ The change seemed to be a prerequisite for Wang and the CCDI to target the former Politburo Standing Committee member Zhou Yongkang, who is a key political adversary to Xi Jinping.¹¹⁸ While Wang’s actions may be construed to mean that he is paving the way for Xi to implement the true economic reforms he has promised, some analysts speculate that Wang’s own history as a princeling through marriage* and his strong ties with major state-owned enterprises indicate that he may favor state monopoly over a greater role for the market in China’s economy.¹¹⁹

Further diverging from previous anticorruption campaigns, the current campaign has targeted greater numbers of high-level officials within the CCP, military, and state-owned enterprises to include: Zhou Yongkang, former Politburo Standing Committee member and secretary of the CCP’s Central Politics and Law Commission;† Xu Caihou, vice chairman of the Central Military Commission under then President Hu; and Jiang Jiemin, the former chairman of China National Petroleum Corporation (CNPC).¹²⁰ Zhou, highly influential in the petroleum sector and domestic security apparatus, became the first current or retired member of the Politburo Standing Committee to be investigated in over three decades.¹²¹ Xu, the most powerful uniformed military official under President Hu, became the highest-ranking PLA officer to be expelled from the CCP in nearly three decades.¹²² Both Zhou and Xu are linked to the disgraced Chongqing party boss Bo Xilai, who was expelled from the CCP and sentenced to life in prison in 2013.¹²³

The anticorruption campaign has also targeted high-level officials at powerful state-owned enterprises, such as the CNPC, China’s largest national oil company. China’s National Audit Office uncovered 35 cases of bribery and embezzlement at various state-owned enterprises earlier this year and in June reported fraud in 11 state-owned enterprises.¹²⁴ Shortly after, the CCP expelled Jiang Jiemin, the former chairman of CNPC, and Wang Yongchun, the former vice general manager of CNPC.¹²⁵ In total, the CCDI has found 67

* Wang Qishan is the son-in-law of former Politburo Standing Committee member and vice premier Yao Yilin. Kerry Brown, *The New Emperors: Power and the Princelings in China* (New York, NY: I.B. Tauris & Co. Ltd., 2014), pp. 150–158; Brookings Institution, “Wang Qishan: One of China’s Top Future Leaders to Watch,” http://www.brookings.edu/about/centers/china/top-future-leaders/wang_qishan.

† The CCP’s Central Politics and Law Commission oversees China’s domestic security and legal apparatus encompassing police, prosecutors, and judges. Cheng Li, *China’s Top Future Leaders to Watch Biographical Sketches of Possible Members of the Post-2012 Politburo (Part 3)* (The Brookings Institution, August 16, 2012). http://www.brookings.edu/~media/research/files/papers/2012/8/16_china_top_leaders_3_li/china_leaders_three.pdf; Jeremy Page, “China Reins in New Security Boss’s Clout,” *Wall Street Journal*, November 20, 2012. online.wsj.com/news/articles/SB10001424127887323622904578128683521454390?mg=reno64-wsj.

high-level officials at state-owned enterprises guilty of corruption, including 38 executives.¹²⁶

Additionally, the Chinese government has widened the anticorruption campaign to target “naked officials,” who remain in China while sending their children or spouses, usually along with ill-gotten assets, abroad.¹²⁷ The Chinese Academy of Social Sciences estimated that between 1995 and 2008, 20,000 officials fled abroad with \$130 billion in assets.¹²⁸ In January, the Organization Department of the CCP’s Central Committee* issued regulations that prohibited “naked officials,” who are viewed as a flight risk, from promotions within the CCP.¹²⁹ In July, Wang Qishan directed CCDI investigators to pursue “naked officials” and dispatched inspection teams in July to ten provinces to identify such officials as part of its broader corruption investigations.¹³⁰ Later that month, the Guangdong provincial government identified 2,190 “naked officials,” resulting in the removal of 866 officials from their posts.¹³¹

In September, Cao Jianming, the Procurator-General of the Supreme People’s Procuratorate, announced a six-month campaign in pursuit of suspects of corruption who fled abroad through extradition, repatriation, and persuasion.¹³² The Chinese government in 2013 extradited 762 suspects and recovered \$1.7 billion in property and funds.¹³³ This year, more than 400 suspects of corruption were either extradited or volunteered to return to China to turn themselves in.¹³⁴ Chinese official media reported that more than 150 corrupt Chinese officials and citizens currently reside in the United States.¹³⁵

President Xi is attempting to build public support and consolidate power by addressing corruption within the Party and eliminating the power bases of prominent members of different CCP factions that threaten his leadership. In late July, official Chinese media reported that the CCDI was sending a large task force to investigate corruption allegations of CCP members in Shanghai, an enduring stronghold of former President Jiang Zemin.¹³⁶ These moves further suggest that President Xi’s anticorruption campaign is designed at least in part to eliminate potential political threats to his leadership.

Some analysts suggest the anticorruption campaign could help bolster the CCP’s legitimacy in the eyes of the public with the dismissals of high-ranking officials. It could also improve official behavior—at least in the short-run—with reductions in luxury consumption and provide the necessary political capital for President Xi to implement broader institutional reforms in the future.¹³⁷ For analysis on the anticorruption campaign’s potential impact on future economic reform, see Chapter 1, Section 1, “Year in Review: Economics and Trade.”

The campaign is having an effect on the sales of tobacco and liquor, traditional luxury gifts given to Chinese officials in exchange for political favors.¹³⁸ For example, Diageo, the world’s largest liquor firm, experienced a 79 percent drop in 2014 net sales of its high-quality Chinese liquor.¹³⁹ Diageo CEO Ivan Menezes estimates that one-fifth of its high-end Chinese liquor market is attrib-

*The Organization Department of the CCP’s Central Committee is in charge of the selection, promotion, and assignments of CCP officials.

uted to gift giving and government entertaining.¹⁴⁰ In addition, the campaign is harming the VIP gambling market* in Macau, which relies on gaming revenue for nearly 90 percent of its government revenue.¹⁴¹ The revenues from VIP gambling by Chinese government officials and wealthy business executives in Macau dropped 17 percent year-on-year in June.¹⁴² In Hong Kong, sales of luxury goods such as jewelry and watches dropped 28 percent in June, declining for the fifth straight month in a row.¹⁴³

Nonetheless, profiteering opportunities remain endemic in the CCP's patronage structure. Without systematic legal and political reforms such as free media and an independent judicial system, the anticorruption campaign will have limited long-term effectiveness.¹⁴⁴ The recent crackdowns on anticorruption activists such as the New Citizens Movement† and continued secrecy of CCDI investigations suggest the government is not ready for such reforms.¹⁴⁵

Ethnic Unrest

In the past year, the Chinese government increased its already tight control in the autonomous regions of Xinjiang and Tibet, providing residents there few outlets to resolve grievances ranging from land seizures and demolitions to religious repression.‡ Unrest in these regions remains a highly sensitive issue for the CCP because protests attract considerable international attention and sympathy, challenge CCP and Chinese government rule over the regions where they are located, and reflect what the CCP considers the “three evils” (separatism, extremism, and terrorism).¹⁴⁶ Exact figures on ethnic unrest are difficult to obtain in Xinjiang and Tibet.§ The Chinese government maintains “widespread, arbitrary, and unexplained” restrictions on independent reporting,¶ severely

*The VIP gambling market accounts for nearly two-thirds of gambling revenues in Macau. Demetri Sevastopulo, “Macau’s High-Rolling Casinos Suffer amid China Anti-Graft Storm,” *Financial Times*, September 26, 2014. <http://www.ft.com/intl/cms/s/0/79e893dc-4552-11e4-9b71-00144feabdc0.html#slide0>.

†The New Citizens Movement is a loosely organized civil society organization that advocates for freedom, justice, equality, and rule of law, specifically the disclosure of government officials’ assets. In 2014, the Chinese government launched a crackdown on the group, arresting many of its members. While its total membership is unknown, the CCP views the group as a threat. Human Rights Watch, “China: End Nationwide Crackdown on Activists,” June 29, 2014. <http://www.hrw.org/news/2014/06/29/china-end-nationwide-crackdown-activists>.

‡In 2009, the Chinese government announced plans to demolish 85 percent of the Old City of Kashgar and redevelop with new construction, but similar to Han Chinese concerns over land seizures, local Uyghur residents report a lack of consultation or transparency and worry over the quality of new construction. Congressional Executive Commission on China, *2013 Annual Report to Congress*, October 10, 2013; Joshua Hammer, “Demolishing Kashgar’s History,” *Smithsonian Magazine*, March 2010. <http://www.smithsonianmag.com/history/demolishing-kashgars-history-7324895/all>.

§Access to Tibet and other Tibetan areas in nearby provinces for foreign journalists, human rights researchers, and tourists remains highly restricted—even more than in Xinjiang—severely limiting the amount of information available. Freedom House, *Freedom in the World 2014* (January 23, 2014). www.freedomhouse.org/report/freedom-world/freedom-world-2014; Stephen McDonnell, “Inside Xinjiang: China Clamps Down on Dissent in Restive Uighur Homeland,” *Australian Broadcasting Corporation*, September 30, 2014. <http://www.abc.net.au/news/2014-09-30/journalists-blocked-from-reaching-areas-in-xinjiang/5776086>.

¶Australian Broadcasting Corporation (ABC) China correspondent Stephen McDonnell faced intense surveillance and constant interference by Chinese officials while filming an investigative report in Xinjiang. In September, Chinese embassy officials warned the ABC in Sydney that screening their report on Xinjiang would have “wider implications,” likely referring to ABC’s business relationships with CCTV and Shanghai Media Group. Stephen McDonnell, “Inside Xinjiang: China Clamps Down on Dissent in Restive Uighur Homeland,” *Australian Broadcasting Corporation*, September 30, 2014. <http://www.abc.net.au/news/2014-09-30/journalists-blocked-from-reaching-areas-in-xinjiang/5776086>; “Chinese Embassy Warns of ‘Wider Implications’ over Foreign Correspondent Story on Xinjiang Conflict,” Australian Broadcasting Corpora-

punishes locals who share information on unrest with foreign news media, and aggressively censors online and social media platforms.*¹⁴⁷ Following ethnic riots in Tibet in 2008[†] and in Xinjiang in 2009,[‡] the Chinese government implemented martial law in these regions that is still largely in effect today.

To counter ethnic dissent, the Chinese government pursues a dual track strategy of a heavy security presence and economic investment.¹⁴⁸ On average, spending on public security from 2007 to 2012 increased annually in Tibet by 28 percent and in Xinjiang by 27 percent.¹⁴⁹ Authorities maintain strict controls on political, religious, and cultural expression and further tighten these controls around sensitive anniversaries such as the CCP's "peaceful liberation" of Tibet in May, the CCP's founding in July, and the 2009 Urumqi ethnic riots in July. Measures include severe limitations on religious practices and institutions;§ short-term shutdowns of media and Internet access;¶ restrictions on international and domestic travel; arbitrary detentions, harassment, and imprisonment of Tibetans and Uyghurs; forcible repatriation of ethnic Uyghurs; and compulsory bilingual education.#

The Chinese government also dedicates billions of dollars toward development projects to increase living standards and spur double-digit economic growth.¹⁵⁰ For example, China is planning to build 808 miles of railway lines and 68,351 miles of roadways in Tibet by 2020.¹⁵¹ Similarly, the Chinese government in 2011 dedicated RMB 2 trillion (roughly \$300 billion) on infrastructure in Xinjiang

tion, October 1, 2014. <http://www.abc.net.au/news/2014-09-30/abc-warned-of-wider-implications-from-china-story/5779218>.

* In August, a Uyghur man who wrote online about the violence in July 2014 was arrested for spreading "rumors." Nectar Gan, "China Arrests Man for Allegedly Spreading Rumours about Deadly Xinjiang Attack," *South China Morning Post* (Hong Kong), August 12, 2014. <http://www.scmp.com/news/china/article/1571316/china-arrests-man-allegedly-spreading-rumours-about-deadly-xinjiang>.

† In March–April 2008, peaceful protests in Lhasa spread throughout Tibet and quickly turned violent, resulting in as many as 220 deaths, 1,300 injured, and nearly 7,000 detained or imprisoned. Robert Barnett, "The Tibet Protests of Spring 2008: Conflict between the Nation and the State," *China Perspective*, March 2009. <http://chinaperspectives.revues.org/4836?file=1>; Edward Wong, "China Tightens Security in Tibet," *New York Times*, March 9, 2009. <http://www.nytimes.com/2009/03/10/world/asia/10tibet.html>.

‡ A conflict between Uyghur and Han in Guangdong province that led to the death of two Uyghur workers triggered large-scale, violent ethnic riots that resulted in 1,700 injuries, 197 deaths, and 1,400 arrests. Amnesty International, "China: 'Justice, Justice: The July 2009 Protests in Xinjiang, China,'" July 2, 2010.

§ For example, in August, local officials in Karamay, Xinjiang, instituted a temporary ban on men with beards and women with headscarves riding public transportation during a sports competition. Ben Blanchard, "China Charges Prominent Uighur Professor with Separatism," Reuters, February 25, 2014. <http://www.reuters.com/article/2014/02/25/us-china-xinjiang-academic-idUSBREA1015420140225>; Alexa Olesen, "In One Xinjiang City, Beards and Muslim Headscarves Banned from Buses," *Foreign Policy*, August 5, 2014. http://www.foreignpolicy.com/articles/2014/08/05/karamay_bans_beards_muslim_headscarves_from_public_buses_xinjiang.

¶ Authorities have regularly shut down the Internet in parts of Xinjiang and Tibet for several days or weeks in response to unrest to include at least twice in 2009, two times in 2012, once in 2013, and twice in 2014. Tania Branigan, "China Cut Off Internet in Area of Tibetan Unrest," *Guardian*, February 3, 2012. <http://www.theguardian.com/world/2012/feb/03/china-internet-links-tibetan-unrest>; Index on Censorship, "China Celebrates Dalai Lama's Birthday by Cutting Communications in Tibetan Region," July 10, 2012. http://www.ifex.org/china/tibet/2012/07/10/communications_cut/; Madeline Earp, *Throttling Dissent: China's New Leaders Refine Internet Control* (Freedom House, July 2013). http://www.freedomhouse.org/sites/default/files/resources/Throttling%20Dissent_FOTN%202013_China_0.pdf; Li Jing, "Police Shoot Dead Dozens of Attackers during Mob Violence in Xinjiang," *South China Morning Post* (Hong Kong), July 29, 2014. <http://www.scmp.com/news/china/article/1562211/dozens-killed-mob-violence-xinjiang-terror-attack>; and Jeremy Page and Ned Levin, "Web Preaches Jihad to China's Muslim Uighurs," *Wall Street Journal*, June 24, 2014. <http://online.wsj.com/articles/web-preaches-jihad-to-chinas-muslim-ughurs-1403663568>.

For in-depth analysis on Xinjiang and Tibet, see Congressional Executive Commission on China, *2014 Annual Report to Congress*, October 9, 2014.

from 2010 to 2015 to include: six airports, 5,200 miles of railways, and 4,446 miles of roadways.¹⁵²

These infrastructure projects aid extraction of natural resources, attract additional Han migration and tourism, and facilitate rapid deployment of Chinese military troops to China's western borders.¹⁵³ In Tibet, the expansion of the railways has improved the accessibility and extraction of Tibet's mineral reserves, valued at RMB 600 billion (an estimated \$98 billion). Natural resource extraction is expected to grow from 3 percent of the region's GDP in 2010 to account for one-third by 2020.¹⁵⁴ However, these mining projects come at the expense of local Tibetans, who must live with severe environmental degradation resulting from mining activities. Local Tibetans also lack royalties or other forms of compensation from these projects—largely overseen by state-owned mining firms with Han Chinese migrant laborers.¹⁵⁵ Additionally, the windfall from tourism largely benefits Han Chinese who provide nearly all the services for Chinese tourists, including hotels, restaurants, and transportation.¹⁵⁶ Uyghurs face similar issues. One Uyghur scholar noted, "The resources from Xinjiang are going one way, and people from the mainland are coming the other way."¹⁵⁷

Simultaneously, the Chinese government promotes assimilation by providing incentives for interethnic marriages and encouraging Han Chinese migration to ethnic areas to dilute the population of Tibetans and Uyghurs, who are the majority. Under President Xi, the Chinese government is encouraging more interethnic marriages, a policy first implemented in Tibet and recently expanded to Xinjiang.¹⁵⁸ Interethnic couples from Tibet and Xinjiang receive cash incentives and preferential access to medical, schooling, and housing benefits.¹⁵⁹ As ethnic tension has risen, these benefits have increased. In one Uyghur-dominated province in Xinjiang, couples are eligible for an annual RMB 10,000 (approximately \$1,600) subsidy for up to five years as well as up to RMB 20,000 (roughly \$3,250) in medical expenses and RMB 5,000 (around \$800) per year for their children attending a state-approved Chinese school.¹⁶⁰ When combined, these benefits are roughly five times the average annual income for rural residents.¹⁶¹ Additionally, the quasi-military, quasi-commercial Xinjiang Production and Construction Corps* announced plans in August to build seven new cities in the next few years to integrate Uyghurs in Xinjiang's restive southern region † into Chinese society.¹⁶²

Despite these attempts to further integrate Tibetan and Uyghur minorities, discriminatory hiring practices ‡ continue to expand the

*The Xinjiang Production and Construction Corps is a unique quasi-military, quasi-commercial that maintains its own administrative, judicial, and enforcement bodies. It is also an important economic driver in Xinjiang, accounting for 17 percent of Xinjiang's GDP in 2013. Chen Yang, "Xinjiang to Build Cities from Scratch in Restive Regions," *Global Times* (China), July 3, 2014. <http://www.globaltimes.cn/content/868764.shtml>; *Economist*, "Circling the Wagons," May 25, 2014. <http://www.economist.com/news/china/21578433-region-plagued-ethnic-strife-growth-immigrant-dominated-settlements-adding>.

† Ethnic minorities, mainly Uyghurs, compose 80 percent of the population in southern Xinjiang. Chen Yang, "Xinjiang to Build Cities from Scratch in Restive Regions," *Global Times* (China), July 3, 2014. <http://www.globaltimes.cn/content/868764.shtml>.

‡ For example, Uyghurs are prevented from becoming truck drivers because they cannot obtain the necessary license to haul fuel over concerns that oil and gas tankers could become weapons. Andrew Jacobs, "Uighurs in China Say Bias Is Growing," *New York Times*, October 7, 2013. <http://www.nytimes.com/2013/10/08/world/asia/uighurs-in-china-say-bias-is-growing.html?pagewanted=all>.

income disparity between these minority groups and Han Chinese, exacerbating tensions.¹⁶³ State-owned enterprises continue to hire Han Chinese predominantly. Local governments have reportedly provided subsidies for Han farmers, separating Uyghurs and Tibetans from the economic opportunities of this investment.¹⁶⁴ For example, a RMB 534 billion (approximately \$87 billion) investment by the Xinjiang Production and Construction Corps in its agricultural farms designated 30 percent of the positions at these farms for ethnic minorities with the remaining 70 percent left for Han Chinese.¹⁶⁵ In July, Chinese officials announced RMB 20 billion (an estimated \$3.2 billion) in funding for Xinjiang's textile sector* to create 800,000 new jobs, but it is unclear how many of these jobs will be designated for Uyghurs.¹⁶⁶

Tibet

Self-immolation became a dramatic form of protest against CCP rule following the ethnic riots in 2008. According to Human Rights Watch and Tibetan exile groups, 132 self-immolations have occurred since 2009.¹⁶⁷ In response, the Chinese government increased its surveillance in 2012 through the construction of 600 police posts and expansion of volunteer security groups.¹⁶⁸ In 2013, the Chinese government further bolstered its presence by stationing 60,000 new officials and Party members in Tibet to conduct political reeducation programs, establish security units for surveillance, and promote economic development.¹⁶⁹ The cost and size of this campaign accounts for more than a quarter of the regional budget and the largest proportion of provincial-level officials sent to the countryside since 1949.¹⁷⁰ In addition, local governments enacted collective punishment on communities and family members to combat the spread and increasing frequency of self-immolation.¹⁷¹ In the predominantly Tibetan Ruergai County in Sichuan Province, forms of punishment included three-year bans on family members' application for loans, business licenses, or government employment; mandatory financial deposits by communities with return dependent on no self-immolations; halt of investment projects for villages and districts where self-immolations occurred; and isolation and financial auditing of monasteries.† Similar guidelines have been found in other counties.¹⁷² These actions have contributed to the decline in the number of self-immolations in the last year. Under President Xi, restrictions remain severe.¹⁷³

Xinjiang

Since 2013, attacks by militant Uyghurs against Han Chinese in Xinjiang have escalated and evolved. Chinese state-run media claims at least 373 people, mainly Uyghurs, have died in Xinjiang-related violence since April 2013, while Uyghur exile groups and the U.S.-government-funded Radio Free Asia report much higher death tolls.¹⁷⁴ See Table 1 for a timeline of this violence.

* Xinjiang Production and Construction Corps, whose workforce is nearly 90 percent Han Chinese, dominates cotton production in Xinjiang. *Economist*, "Circling the Wagons," May 25, 2014. <http://www.economist.com/news/china/21578433-region-plagued-ethnic-strife-growth-immigrant-dominated-settlements-adding>; James Leibold, *Xinjiang Work Forum Marks New Policy of 'Ethnic Mingling'* 14:12 (Jamestown Foundation China Brief, June 19, 2014).

† For additional information on this policy, see Congressional Executive Commission on China, *2014 Annual Report to Congress*, October 9, 2014, pp. 176–178.

Table 1: Timeline of Recent Reported Major Attacks in China

Date	Location	Explanation
October 28, 2013	<i>Tiananmen Square Car Bombing</i> Beijing, Beijing Municipality	A car bomb was driven into the gate of Tiananmen Square killing five and injuring approximately 40 people. The East Turkestan Islamic Movement (ETIM) claimed responsibility.
March 1, 2014	<i>Knife Attack</i> Kunming, Yunnan	A group of eight knife-wielding attackers, rumored to be Uyghur separatists, killed 29 people and wounded more than 143 in the Kunming train station.
April 30, 2014	<i>Train Station Bombing</i> Urumqi, Xinjiang	Shortly after President Xi's trip to the province, a bombing at the Urumqi train station killed three and injured 79 people. Chinese officials blamed ETIM; the Turkestan Islamic Party (TIP) claimed responsibility.
May 22, 2014	<i>Market Bombing</i> Urumqi, Xinjiang	Two cars drove through a Han vegetable market and set off handmade explosive devices, killing 43 people and injuring 94.
July 28, 2014	<i>Violent Clashes</i> Shache County, Xinjiang	Violent clashes between Chinese police and Uyghurs reportedly led to the deaths of 35 civilians and 59 terrorists and the arrest of 215 people. Chinese officials waited a day to report the violence and blamed the bloodshed on ETIM and the influence of foreign terrorist organizations. The number is likely higher with one Han resident claiming more than 1,000 people were killed, and the World Uyghur Congress claiming at least 2,000.
September 21, 2014	<i>Multiple Bombings</i> Bugur County, Xinjiang	Several bombs detonated in a shop, open market, and two police stations. Chinese official media initially reported 2 deaths and revised its figures five days later to 50 deaths, including 40 'rioters' and 54 injured. Radio Free Asia disputes these figures with reports from eyewitnesses of over 100 people injured.

Source: "China Says Islamist's Holy War Message Proves Terror Threat," Reuters, November 25, 2013. <http://www.reuters.com/article/2013/11/25/us-china-xinjiang-idUSBRE9A00B520131125>; Shannon Tiezzi, "Who Is Fighting China's War on Terror?" *Diplomat*, November 26, 2013. <http://thediplomat.com/2013/11/who-is-fighting-chinas-war-on-terror/>; BBC, "China Kunming Knife Attack: Three Suspects Captured," March 3, 2014. <http://www.bbc.com/news/world-asia-china-26420863>; AFP, "Kunming Knife Gang 'Tried to Leave China' before Attack," *Telegraph*, March 5, 2014. <http://www.telegraph.co.uk/news/worldnews/asia/china/10677244/Kunming-knife-gang-tried-to-leave-China-before-attack.html>; Christopher Bodeen, "Attacks Show Bolder Terror Threat Growing in China," Associated Press, May 2, 2014. <http://www.washingtontimes.com/news/2014/may/2/attacks-show-bolder-terror-threat-growing-in-china/>; Michael Martina and Megha Rajagopalan, "Islamist Group Claims China Station Bombing: SITE," Reuters, May 14, 2014. <http://www.reuters.com/article/2014/05/14/us-china-xinjiang-idUSBREA4D07H20140514>; Edward Wong and Chris Buckley, "32 Terrorist Groups Smashed in Xinjiang, China Says," *New York Times*, June 23, 2014. <http://www.nytimes.com/2014/06/24/world/asia/32-terrorist-groups-smashed-in-xinjiang-china-says.html>; Alexa Olesen, "In One Xinjiang City, Beards and Muslim Headscarves Banned from Buses," *Foreign Policy*, August 5, 2014. http://www.foreignpolicy.com/articles/2014/08/05/karamay_bans_beards_muslim_headscarves_from_public_buses_xinjiang; Xinhua, "37 Civilians Killed, 13 Injured in Xinjiang Terror Attack," *China Daily*, August 3, 2014. http://www.chinadaily.com.cn/china/2014-08/03/content_18237292.htm; Shohret Hoshur and Qiao Long, "At Least 2,000 Uyghurs Killed' in Yarkand Violence: Exile Leader," Radio Free Asia, August 5, 2014. <http://www.rfa.org/english/news/uyghur/yarkand-08052014150547.html>; Xinhua, "40 Ri-

oters Dead in Luntai Country Violence in Xinjiang,” September 25, 2014. http://news.xinhuanet.com/english/china/2014-09/25/c_127035563.htm; and Shohret Hoshur and Eset Sulaiman, “Official Death Toll in Xinjiang’s Bugur Violence Climbs to 50,” Radio Free Asia, September 25, 2014. <http://www.rfa.org/english/news/uyghur/bugur-09252014210804.html>.

Official Chinese media and government sources labeled these incidents as terrorist attacks and have regularly blamed Uyghur terrorists with ties to the East Turkestan Islamic Movement (ETIM)* and Turkestan Islamic Party (TIP) for any violence in Xinjiang.¹⁷⁵ However, many analysts argue that the current influence and reach of Uyghur terrorists within Xinjiang has remained small.¹⁷⁶ Michael Clarke, research fellow at the Griffith Asia Institute, argues that TIP is limited by lack of resources, small membership, and a base of operations in Uzbekistan.¹⁷⁷ Furthermore, Dilxat Rexit, a spokesperson for the World Uyghur Congress, highlighted China’s exaggeration of terrorism in Xinjiang stating, “This so-called charge of terrorism is a way for the government to avoid taking responsibility for the use of excessive force that causes so many casualties.”¹⁷⁸ For example, in May, protests by hundreds of disenfranchised Uyghurs over the arrest of several middle school girls and women wearing headscarves ended in the death of at least two protestors and detention of more than 100 Uyghurs.¹⁷⁹ A complete and rigorous analysis of the scope and nature of the violence in Xinjiang is difficult because Beijing tightly controls travel and media reporting in the region. As a result, available information is fragmented or poorly corroborated.

In addition to rising levels of violence between disaffected Uyghurs and police, the nature of the attacks by Uyghur militants has changed. Whereas Uyghur militants had usually targeted government officials and buildings in Xinjiang, they are now attacking civilians and soft targets in the region. Dr. Clarke explains:

*The pattern of the recent attacks does suggest an escalation or even radicalization of Uighur opposition to Chinese rule. In contrast to past episodes of low-level violence in Xinjiang, which have been characterized by low technology and opportunistic attacks on representatives of the state (e.g., police, public security personnel or government officials), the current spate of violence through its targeting of public spaces is clearly designed to be indiscriminate and mass impact in nature.*¹⁸⁰

Moreover, these militants may be employing tactics and strategies learned through their association with other international organizations. In a paper for *Strategic Studies Quarterly*, Philip Potter, an assistant professor of public policy and political science at the University of Michigan, explains, “China’s ongoing security crackdown in Xinjiang has forced the most militant Uyghur separatists into volatile neighboring countries, such as Pakistan, where they are forging strategic alliances with, and even leading, jihadist factions affiliated with al-Qaeda and the Taliban.”¹⁸¹

* ETIM is a Uyghur terrorist group seeking an independent Islamic state in Xinjiang. It was designated in 2002 as a terrorist organization on the UN’s 1267 list and the U.S. Department of State’s Terrorist Exclusion Act. Most analysts believe ETIM operated briefly from the late 1990s to the early 2000s, collapsing after the death of its leader in 2003. It was largely replaced by the Turkestan Islamic Party (TIP) in 2005, leading the U.S. Department of State to remove ETIM from their list.

To help rein in rising unrest in Xinjiang, the Chinese government has stepped up economic development programs and enacted stronger social and religious restrictions to promote stability and to further assimilate the Uyghurs into China's majority ethnic Han society. In February, the Xinjiang government announced that over the next two years, it would expand its local presence by stationing 200,000 high-level Party members within the region to conduct outreach, increase surveillance, and promote economic development.¹⁸² Instead of easing tension, these restrictions along with pervasive discrimination are increasingly radicalizing Uyghur opposition within Xinjiang.¹⁸³

In addition, President Xi in May 2014 launched a year-long counterterrorism campaign that has led to numerous arrests, public mass sentencing of suspects, new rules for bus carry-on items, and expansion of surveillance. Since the campaign began, Chinese officials have dismantled more than 40 organizations labeled by Beijing as terrorist groups and arrested more than 600 people in Xinjiang.¹⁸⁴ In a show of force, authorities held a public mass sentencing at a stadium in Xinjiang for 55 people and handed out three death sentences for terrorism, separatism, and murder.¹⁸⁵ In July, the Chinese government raised the level of security checks in Urumqi on public transportation and issued stricter rules for bus carry-on items—similar to airlines—that ban liquids, cigarette lighters, and even yogurt.¹⁸⁶ In September, officials in Urumqi sought to further expand surveillance by raising rewards for information on terrorism or religious extremism up to RMB 1 million (roughly \$163,000).¹⁸⁷ Approximately RMB 100,000 (nearly \$16,000) in rewards was handed out to each of six informants in Hotan in August.¹⁸⁸

China's Responses to Unrest

The CCP has historically maintained domestic stability by relying on internal security forces and closely monitoring unrest. Since the late 1990s, rising social unrest has led to increasing public security budgets and personnel dedicated to suppressing dissent. President Xi has further expanded and enhanced China's domestic stability maintenance apparatus. These changes have implications for freedom of expression and rule of law in China, as well as U.S. economic and security interests.

The CCP's Stability Maintenance Apparatus

The set of tools China uses to address social instability cuts across powerful, overlapping institutions, involving the political, security, and legal arms of the Chinese government and CCP—from the national through the local levels. China's internal security structure includes its three main internal security forces—the Ministry of Public Security (MPS), People's Armed Police (PAP), and People's Liberation Army (PLA)—along with the Ministry of State Security,* other state law enforcement organs, state and private se-

*The Ministry of State Security (MSS) is one of China's leading civilian intelligence entities responsible for both foreign and domestic intelligence work. It is subordinate to the State Council. Among other responsibilities, the MSS collects intelligence on dissenters in China and reportedly targets Chinese dissidents and prodemocracy groups abroad. For more information, see U.S.-China Economic and Security Review Commission, *2009 Annual Report to Congress*, November 2009, pp. 150–151.

curity contractors, and citizen volunteers. The legal body of China's stability maintenance apparatus involves petition offices, courts, procuratorial bureaus, and China's vast network of legal and extra-legal detention facilities. Finally, the stability maintenance apparatus includes the Party's Central Propaganda Department, which is responsible for censoring media to prevent discussion of topics that could lead to calls for change, and the Internet censorship apparatus.¹⁸⁹

Prior to President Xi, then Politburo Standing Committee member Zhou Yongkang, now under investigation for corruption, largely controlled China's domestic stability maintenance apparatus by virtue of his position as Secretary of the CCP's Central Politics and Law Commission. The Central Politics and Law Commission at the time oversaw the political-legal committees across the Chinese government that have jurisdiction over the courts, prosecutors, police, and surveillance. Since coming to power in 2012, President Xi has taken control of the domestic security apparatus by demoting the Central Politics and Law Commission Secretary seat from the Politburo Standing Committee to the regular Politburo, along with creating and chairing the new Central National Security Commission and the Central Internet Security and Informationization Leading Group (see "Internet and Social Media Censorship Controls" later in this section). For a discussion of the Central National Security Commission and its focus on domestic security, see Chapter 2, Section 1, "Year in Review: Security and Foreign Affairs."

As chair of these new policy bodies, President Xi directly oversees the most important actors and components of China's domestic stability maintenance apparatus, superseding the Central Politics and Law Commission. The stability maintenance apparatus now has higher level and more centralized leadership under President Xi, potentially enabling China to more effectively and efficiently anticipate and respond to social unrest. Dr. Tanner testified to the Commission that "[President] Xi may be the first Party chief since 1949 to personally head a top committee overseeing domestic security and may be on his way to becoming the most hands-on leader with regard to social control in China's history."¹⁹⁰

China's Internal Security Forces

Over the last decade, China strived to improve its ability to suppress "mass incidents" by adding resources to and adjusting the structure and missions of the MPS, PAP, and PLA. These forces now have higher-quality equipment and arms and conduct more realistic training, allowing for faster, more robust, and more lethal responses to sudden outbreaks of unrest.

Ministry of Public Security: According to the CCP, the MPS—along with national and local state security, judicial, and procuratorial bureaus—serve as China's "first line" of internal security.*

* According to CCP writings, the MPS serves as the first line of internal security, the PAP functions as the second line, and the PLA occupies the third line. Murray Scot Tanner, "Chapter 3: How China Manages Internal Security Challenges and its Impact on PLA Missions," in Roy Kamphausen, David Lai, and Andrew Scobell, *Beyond the Strait: PLA Missions Other Than Taiwan* (Carlisle, PA: U.S. Army War College, April 2009), p. 45.

The ministry, which is subordinate to the State Council, was formed in 1954. The MPS deploys approximately 1.9 million police officers to local Public Security Bureaus that are spread across China.¹⁹¹

China supplements MPS officers with additional law enforcement and other personnel, who are mainly supplied by private Chinese security firms, to assist with the challenges of responding to sudden outbreaks of unrest. In a September 2011 speech, then domestic security czar Zhou Yongkang mentioned that 3,000 security companies and a total of over 4.2 million personnel—more than double the number of MPS police officers—assist law enforcement efforts.* In addition, cities employ urban management law enforcement officers † charged with enforcing a broad group of city regulations, such as performing forced evictions. Many cases depict these officers violently suppressing dissent, and as a result, citizens often view them unfavorably.¹⁹²

According to its official website, the ministry's main responsibilities are local law enforcement and "maintenance of social security and order."¹⁹³ Local police under the MPS often are the first responders to civil disturbances, dispersing crowds and, alongside local government officials, negotiating settlements with protesters.

In response to a string of violent attacks against civilians since 2013—such as the knife attack at the Kunming train station in March 2014—and rising levels of violence and attacks on police officers in China more broadly, the MPS has increased routine patrols in urban areas.¹⁹⁴ These patrols are focused particularly on high-traffic areas, such as train stations, airports, schools, hospitals, and tourist attractions.¹⁹⁵ Although most MPS officers on routine patrols historically have been unarmed, possessing only non-lethal means to quell unrest (such as pepper spray and clubs), a new policy announced in April 2014 allows officers to carry revolvers while patrolling in major cities and sensitive regions.‡ Reports of accidental shootings by MPS officers in China already have occurred, suggesting a lack of adequate MPS police training for operating firearms. Continued accidental shootings could fuel greater levels of unrest by increasing public resentment of Chinese authorities.¹⁹⁶

The MPS also has expanded its surveillance and monitoring presence in major cities in an effort to combat terrorism. Security checks at train and subway stations in Beijing and other cities have increased.¹⁹⁷ In addition, the MPS enlisted 850,000 volunteers to monitor suspicious activity in Beijing; other provinces and municipalities have followed. The Beijing Municipal Public Security Bureau began providing awards of up to RMB 40,000 (approx-

*Dr. Tanner adds that this figure may not include hundreds of thousands of private security personnel not affiliated with the forces Zhou Yongkang mentioned. Murray Scot Tanner, "Internal Security," in Chris Ogden, *Handbook of China's Governance and Domestic Politics* (London: Routledge, 2013), pp. 90–91.

†Urban management law enforcement officers are commonly referred to as *chengguan*. For more background on these officers and their common use of violence to address unrest, see Human Rights Watch, "Beat Him, Take Everything Away," May 23, 2012. http://www.hrw.org/sites/default/files/reports/china0512ForUpload_1.pdf.

‡The new armed patrols are being conducted in Xi'an, Shanghai, Qingdao, Changsha, and Kunming, among other cities, and in the autonomous regions of Xinjiang and Tibet. Associated Press, "Chinese Police Begin Carrying Guns During Patrols," April 21, 2014. <http://bigstory.ap.org/article/chinese-police-begin-carrying-guns-during-patrols>.

mately \$6,500) for any “substantial information on threats,” while Liaoning and Sichuan, among other provinces, have announced awards up to RMB 500,000 (approximately \$81,000).¹⁹⁸

Over the last decade, the MPS has strengthened its ability to conduct law enforcement and stability maintenance operations by creating “special police” units in major cities across China that specialize in antiriot and counterterrorism operations;¹⁹⁹ improving the ministry’s intelligence collection and dissemination capabilities through an emphasis on “informationization”;^{*} and constructing additional extrajudicial detention facilities.²⁰⁰

People’s Armed Police: The PAP is China’s “second line” of internal security. It falls under the direction of the Central Military Commission and State Council. Formed in 1982, the paramilitary police force consists of over 660,000 personnel.[†] Almost two-thirds are assigned to local governments for internal security or to PAP headquarters in Beijing, while most of the remaining personnel are assigned to the MPS for border defense.²⁰¹

There are generally two types of PAP units responsible for internal security: strategic PAP divisions and provincial PAP units. The 14 strategic PAP divisions are converted PLA infantry divisions.[‡] These divisions are available to respond to internal disturbances—including riots, terrorist attacks, and emergency operations—anywhere in China and would support the PLA during wartime.[§] The 30 provincial PAP units are subordinate to provinces, autonomous regions, and centrally-administered cities.²⁰² These units usually are the first reinforcements for the local public security bureau during “mass incidents.” PAP units generally are armed with automatic rifles and full riot gear, and operate armored personnel carriers.²⁰³ Some elite PAP subunits possess sniper rifles, silenced submachine guns, and assault rifles.²⁰⁴

The PAP’s ineffective response to the 2009 Xinjiang riots, one of the deadliest incidents of unrest in China in the last decade with almost 200 deaths, provided Beijing with the impetus to accelerate PAP modernization. During the riots, the Xinjiang PAP units failed to provide sufficient warning of the approaching violence and could not stop the attacks without calling in strategic PAP units for reinforcement.²⁰⁵ Since the 2009 Xinjiang riots, the PAP has taken

*“Informationization” refers to the forces’ ability to use C4ISR (command, control, communications, computers, intelligence, surveillance, and reconnaissance) capabilities to accomplish missions. Peter Mattis, *Informationization Drives Expanded Scope of Public Security* (Jamestown Foundation China Brief, April 12, 2013).

†PAP estimates vary to as high as one million, but the official government figure is 660,000. Anthony H. Cordesman, *Chinese Military Modernization and Force Development: Chinese and Outside Perspectives* (Center for Strategic and International Studies, July 2, 2014), p. 164; International Institute for International Studies, *The Military Balance* (London: Routledge, February 2014), p. 239; and Dennis J. Blasko, *The Chinese Army Today: Tradition and Transformation for the 21st Century* (London: Routledge, February 2012), pp. 27–28.

‡No PAP units are stationed in Hong Kong or Macau. Dennis J. Blasko, *The Chinese Army Today: Tradition and Transformation for the 21st Century* (London: Routledge, February 2012), pp. 109–111.

§The PAP consists of three unit groupings: (1) internal security units under PAP headquarters; (2) security guard, border defense, and firefighting units managed by provincial and county-level departments, and MPS bureaus; and (3) hydropower, gold mine, transportation, forestry, and construction units with oversight from PAP headquarters and various ministries. Cortez A. Cooper III, “Chapter 4: ‘Controlling the Four Quarters’: China Trains, Equips, and Deploys a Modern, Mobile People’s Armed Police Force,” in Roy Kamphausen, David Lai, and Travis Tanner, *Learning by Doing: The PLA Trains at Home and Abroad* (Washington, DC: National Bureau of Asian Research, November 2012), p. 137.

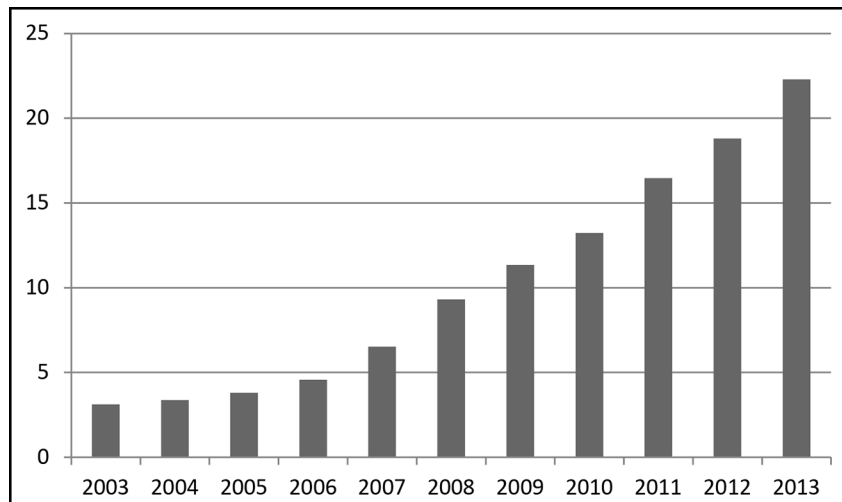
measures to enhance information sharing and disseminate intelligence within and across units and to high-level leadership in Beijing. The PAP also has increased its ability to rapidly move forces to priority areas by upgrading its facilities in Xinjiang and Tibet; forward-deploying elements of an elite PAP unit to Xinjiang; and improving its capabilities through more realistic and frequent training.²⁰⁶

Beijing's dissatisfaction with the PAP's response to the 2009 Xinjiang riots also led the government to make a major change to the PAP's bureaucratic structure. The 2009 People's Armed Police Law for the first time clearly delegated authority over the PAP, re-assigning bureaucratic control over deploying the PAP from county officials to provincial officials and explicitly outlining its missions.²⁰⁷ Although the People's Armed Police Law sought to clarify which officials are allowed to mobilize the PAP in the event of an incident, Dr. Tanner noted to the Commission there is still a bureaucratic struggle between law enforcement and military officials over delegating authority to local officials.²⁰⁸

To facilitate the PAP's incremental upgrades of its facilities and units, Beijing has increased the PAP budget by over 10 percent every year since 2005 (see Figure 2). The PAP budget has more than doubled in the last five years, from RMB 63.4 billion (approximately \$9.3 billion) in 2008 to RMB 136.2 billion (approximately \$22.3 billion) in 2013. China did not publicly announce its 2014 PAP budget in March during the annual National Party Congress meeting as it has in past years.

Figure 2: China's Official Budget for the PAP, 2003–2013

(US\$ billions)



Note: These numbers represent China's official PAP budgets, not actual aggregate spending. All budgetary figures are converted from RMB into U.S. dollar (USD) based on China's year-end nominal exchange rate.

Source: China's Ministry of Finance, <http://yss.mof.gov.cn/zhengwuxinxi/caizhengshuju/>.

President Xi's calls for more realistic training in the PAP and frequent visits to PAP units in 2014 following successive violent attacks on civilians in China indicate his greater emphasis on China's counterterrorism efforts and on developing PAP forces prepared for real-world missions.²⁰⁹ President Xi's plans for broader PAP reform, however, are unclear. The Third Plenum Decision called for streamlining the structure of China's internal security forces, but Beijing has not publicized any subsequent policy decisions.²¹⁰

People's Liberation Army: The PLA serves as China's third and final "line" of internal security, and one of its primary missions is to maintain domestic stability and defend Party control. It falls under the direction of the Central Military Commission. The PLA consists of about 2.3 million total active personnel and roughly 510,000 reserve forces.²¹¹ The majority of PLA personnel are subordinate to China's seven geographically organized military regions and garrisoned near or in major Chinese cities.²¹²

Although the PLA increasingly has emphasized external missions beyond China's borders since 1989, the PLA's main mission remains to preserve the CCP regime. Beijing can deploy the PLA for internal security missions as necessary. For example, the PLA can provide transportation, logistics, and intelligence support for the MPS and PAP and assist local internal security forces with the protection of key facilities and infrastructure during crises.²¹³

Since the mid-2000s, the PLA also has assumed broader domestic responsibilities to include humanitarian assistance and disaster relief (HA/DR).²¹⁴

- According to Chinese state media, the PLA in 2014 has nine national teams consisting of 50,000 troops and 45,000 provincial personnel for HA/DR.²¹⁵ In response to the August Yunnan earthquake that killed almost 600 people, the PLA deployed around 10,000 troops and 10 helicopters for rescue operations. The increased frequency and human impacts of national disasters, such as the 2008 Sichuan earthquake that killed 87,150 people, have pushed China to improve domestic readiness and place greater emphasis on HA/DR as a key PLA peacetime activity.²¹⁶

Counterterrorism is another area in which the PLA has assumed greater responsibilities over the last decade.²¹⁷

- In March 2014, Saimati Muhammad, major general and deputy commander of the Xinjiang Military Area Command, said "Xinjiang has been upgrading supplies for border troops and stepped up counter-terrorism training to armed forces."²¹⁸ In addition, the PLA has increased training with the MPS and PAP to improve coordination for offensive counterterrorism operations and border defense.²¹⁹
- The PLA has expanded the frequency and scope of joint counterterrorism training with foreign militaries. In August 2014, China participated in "Peace Mission-2014," a counterterrorism exercise conducted in Inner Mongolia with over 7,000

troops from all Shanghai Cooperation Organization (SCO)* member countries, marking the largest joint SCO military exercise to date.²²⁰ China has participated in previous Peace Mission iterations since 2007, sending only basic support personnel and conducting basic training with other SCO units.²²¹ In this year's exercise, China sent new PLA personnel and equipment for the first time, including more specialized Chinese logistics and reconnaissance personnel and an armed drone.²²² In addition, this year's exercise focused on incorporating information-based conditions and conducting joint operations across SCO countries.²²³

U.S.-China Cooperation on Counterterrorism

In July 2014, the United States and China jointly held the U.S.-China Counterterrorism Dialogue as part of the U.S.-China Strategic and Economic Dialogue. Human Rights Watch criticized the decision of the United States to hold the event, as it could be viewed by Beijing as U.S. acceptance of China's repressive treatment of Uyghurs as part of its counterterrorism campaign.²²⁴ Since April 2013, Chinese state media has reported at least 323 deaths in Xinjiang alone—internal security forces were responsible for almost half of the casualties and most were killed with little reported evidence the accused assailants were indeed terrorists.²²⁵

According to Amy Chang, research associate at the Center for a New American Security, the United States should be careful engaging with China on counterterrorism:

The Counterterrorism Dialogue could have been an opportunity for the United States to moderate China's harsh counterterror activities, but U.S. officials should be concerned that its cooperation is not misconstrued for endorsement of China's stance. The United States has previously made this mistake: after the September 11 attacks, China capitalized on U.S. vulnerability to terrorism to paint its own domestic ethnic-religious problems as a substantive terrorist issue. In 2002, this resulted in the designation of East Turkestan Islamic Movement (ETIM) as a foreign terrorist organization, granting a carte blanche for China to pursue severe counterterrorist policies without judicious oversight.†

Although U.S. cooperation with China on counterterrorism poses many challenges, it also has the potential for positive engagement if exchanges are limited to areas of common concern—such as Middle East jihadist groups and piracy.

*The Shanghai Cooperation Organization formed in 2001 and consists of six core member countries, including China, Russia, Kazakhstan, Kyrgyzstan, Tajikistan, and Uzbekistan. Shanghai Cooperation Organization, <http://www.sectsc.org/EN123/index.asp>.

†Several years after designating ETIM as a terrorist organization, the United States removed ETIM's terrorist designation. Amy Chang, "Can America 'Just Say No' to China?" *National Interest*, August 18, 2014. <http://nationalinterest.org/feature/can-america-just-say-no-china-11090?page=2>.

China's Legal Mechanisms to Repress Dissent

China has expanded its stability maintenance capabilities by enhancing legal mechanisms to repress dissent. After more than two decades of promising legal reforms—albeit slowly and unevenly implemented—Beijing since the mid-2000s has sought to weaken these legal measures and reassert the Party's control.²²⁶ President Xi's early speeches and official appointments led some observers to be hopeful he would pursue broader legal reforms. However, the wide-scale crackdown on rights advocates and lack of measured progress to strengthen rule of law leave reform in doubt. CCP officials have indicated they will maintain close management of the Chinese legal system, preventing any challenges to the Party.²²⁷

One of the Chinese government's methods of repressing dissent is the pervasive practice of pressuring judges to resolve civil disputes through Maoist-era mediation instead of trials decided by law. By doing so, China hinders citizens' access to legal counsel and a fair trial. According to Carl Minzner, associate professor of law at Fordham University, mediation sessions involving cases that could generate social unrest are “primarily political conferences aimed at coordinating responses between government bureaus (including the judiciary) and crafting solutions to ward off protest.”²²⁸ Such disputes often do not result in fair compensation for litigants and tend to do little to prevent future citizen complaints and unrest. In some cases, the sessions can be held outside of legal channels, and the parties involved in the dispute can be barred from participating.²²⁹

In the limited trials that do occur, lawyers in China, particularly those handling public interest cases, face more pressure from the Chinese government. For example, lawyers representing politically sensitive individuals often experience regular harassment, the threat of detention, and, in some cases, the revocation of their license or practice.²³⁰ Continuing a trend from the latter years of then President Hu, President Xi is reining in lawyers advocating for justice based on the Chinese constitution.²³¹ In January 2014, President Xi emphasized that “all political and legal workers should maintain absolute loyalty to the Party.”²³²

The CCP also restricts the ability of Chinese citizens to obtain redress for their grievances by detaining critics through extralegal means. For example, extralegal detention allows officials to put citizens expressing dissent into “black jails” and to forcibly admit them into psychiatric and drug rehabilitation facilities* and “legal education classes.”† “Legal education classes,” often held in poor conditions, are designed to “educate” dissenters about relevant laws and regulations.²³³ In these extralegal detention facilities, citizens lack access to a lawyer and can be held indefinitely.²³⁴

In a potentially positive development, China recently announced legal reforms meant to remove some tools used by local officials to

* Although China in 2013 enacted its first Mental Health Law, requiring most patients admitted to psychiatric facilities to be made voluntarily, petitioners are still forcibly admitted. Radio Free Asia, “Chinese Activists Continue to Be ‘Mentally Ill’ in Spite of New Law,” November 14, 2013. <http://www.rfa.org/english/news/china/law-11142013172615.html>.

† Police also use “soft detention,” or de facto house arrest, on dissidents, rights activists, and others who threaten “social stability.” Congressional-Executive Commission on China, *Annual Report 2013*, October 10, 2013, p. 79.

arbitrarily imprison Chinese citizens. One of these reforms was the abolition of the reeducation through labor (RTL) system following the Third Plenum in November 2013.²³⁵ RTL is an extrajudicial, administrative detention system of sentencing for up to three years, with a possible fourth year extension, imposed by police officials against political dissidents and petitioners seeking redress for grievances.²³⁶ China's new leadership likely seeks to be seen as responding to public outrage over a string of high-profile abuses that have been covered extensively in recent years in official and unofficial media in China and discussed by Chinese Internet users.

Although Chinese state media claims tens of thousands of prisoners had been released from RTL facilities by February 2014, local governments retain methods to detain government critics either extralegally or through the current legal system. Short-term criminal detentions have already increased significantly in the wake of the RTL system's closure, and other forms of extralegal detention appear to be on the rise.²³⁷

Local governments also may have economic incentives to continue operating RTL facilities despite central government directives. The Chinese government has long viewed the RTL system as an important source of economic production. As of 2013, an estimated 160,000–260,000 prisoners produce a wide-range of products, some of which China exports to the United States.²³⁸ These RTL facilities are a valuable source of income for local officials and would be difficult to replace.²³⁹

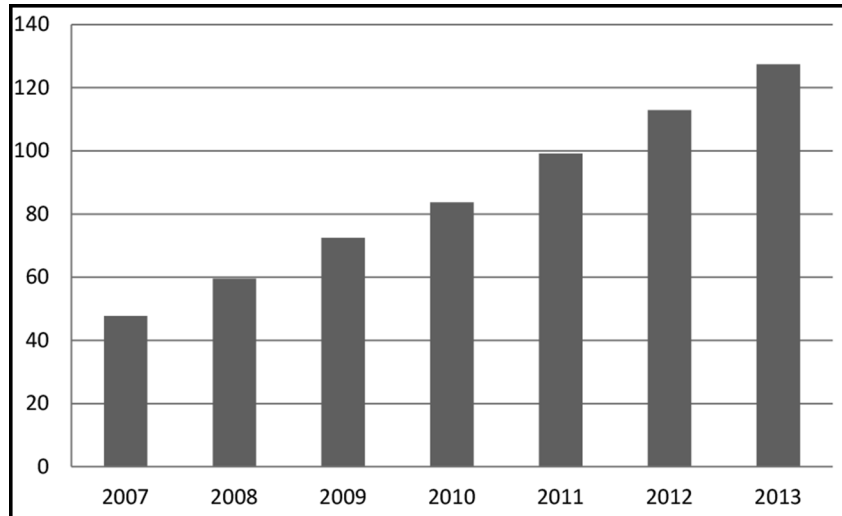
China's Public Security Budget

The CCP provides China's stability maintenance apparatus with ample funding to support its expanding missions and capabilities. The official public security budget includes funds for China's internal security forces, legal apparatus, and censorship regime. In addition, the budget includes other areas that do not apply specifically to stability maintenance, such as public infrastructure, safety, and traffic control.²⁴⁰

China's publicly acknowledged public security spending* in 2013 was RMB 778.7 billion (approximately \$127.4 billion). Official public security spending increased more than RMB 67 billion (roughly \$14 billion) in 2013 from 2012, exceeding national defense spending for the fourth year in a row (see Figure 3). (For more information on China's national defense budget, see Chapter 2, Section 2, "China's Military Modernization.") China's central government public security budget (not including provincial and local spending) rose 8 percent faster than the official national defense budget from 2007 to 2013, according to data from China's Ministry of Finance.²⁴¹ Nicholas Bequelin, researcher at Human Rights Watch, explains that this trend "shows the party is more concerned about the potential risks of destabilization coming from inside the country than outside, which tells us the party is much less confident."²⁴²

* Observers assert the actual public security budget is far greater than China's announced figure. Edward Wong, "Beijing Goes Quiet on Rise of Local Security Budgets," *New York Times*, March 6, 2014. <http://sinosphere.blogs.nytimes.com/2014/03/06/beijing-goes-quiet-on-rise-of-local-security-budgets/>.

Figure 3: China's Official Spending on Public Security, 2007–2013
(US\$ billions)



Note: All data is extracted from budget execution figures, reflecting the official year-end funds outlaid. All budgetary figures are converted from RMB into USD based on China's year-end nominal exchange rate. China's Ministry of Finance does not provide specific national "public security" budgetary data prior to 2007.

Source: China's Ministry of Finance, <http://yss.mof.gov.cn/zhengwuxinxi/caizhengshuju/>.

In 2014, China for the first time did not publicly disclose its full public security budget after the annual session of the National People's Congress, only reporting the central government budget (RMB 205.1 billion or approximately \$33.3 billion).²⁴³ China's decision not to release this figure could be due in part to the sensitive timing of the Party session following multiple violent attacks on Chinese civilians. Dr. Xie Yue, political science scholar at Tongji University and expert on China's public security budget, asserted, "Once the stability maintenance fund gets too big, especially in comparison with the defense budget, it's likely to raise concerns among the international community and domestic public. I think [Beijing is] sidestepping the issue on purpose."²⁴⁴

Crackdown on Dissenters under President Xi

President Xi has implemented a campaign not seen in China since the 1970s against individuals expressing dissent. Aside from targeting outspoken dissidents, President Xi has cracked down on popular online commentators and advocates calling for reform under Chinese law. Since President Xi took office, dozens of individuals across civil society—lawyers, writers, activists and others—have been sentenced to one- to four-year jail terms.²⁴⁵ Dr. Sophie Richardson, China director of Human Rights Watch, testified to the Commission that "people are now being [criminally charged] for activities that previously would have resulted in a mere chat with the

authorities.”²⁴⁶ Some of the most notable arrests this year include the following:

- In January, police arrested Ilham Tohti, a Uyghur rights activist and economics scholar, despite his peaceful calls for equal rights to Uyghur minorities. Six months later, Xinjiang prosecutors charged Mr. Tohti with separatism, a charge that carries a potential death sentence.²⁴⁷ In September, Mr. Tohti was given a life sentence in prison, and all of his assets were seized by court order.²⁴⁸ Notably, in July, Elliot Sperling, a U.S. scholar on Tibet and Indiana University professor, was denied entry to China, likely due to his ties to Mr. Tohti.²⁴⁹ Dr. Sperling is part of a growing number of U.S. academics barred from China as a result of their professional work on topics China deems sensitive or their relationships with certain Chinese citizens.*
- In January, Xu Zhiyong, lawyer and founder of the New Citizens Movement, was arrested and received a criminal sentence of four years in prison. He was charged with “gathering a crowd to disturb public order.”²⁵⁰ Dr. Richardson, after the April arrests of New Citizens Movement members for anticorruption protests, said, “Ironically, it was in part Xi Jinping’s [anticorruption campaign]—as well as Xu Zhiyong’s [ideas] and others—that inspired these activists to take to the streets to peacefully support the official campaign.”²⁵¹

In addition, the 25th anniversary of the Tiananmen Square massacre in 2014 marked the largest crackdown on public expression yet. According to Human Rights in China, a New York-based non-profit organization, 136 individuals were either detained or arrested, faced restricted movements, or disappeared due to their purported involvement or feared participation in 25th anniversary activities.²⁵² Nearly a month before the anniversary, Chinese authorities detained Pu Zhiqiang, a well-known human rights lawyer, the day after he attended a private Beijing seminar of 16 liberal academics, lawyers, and others, revisiting the official verdict of the Tiananmen Square massacre. Along with the arrest of Mr. Pu, 12 of the meeting participants spent weeks in detention before eventually being released the day after the anniversary.²⁵³ The Chinese government formally arrested Mr. Pu in June on charges of “picking quarrels and provoking troubles” and “illegally obtaining personal information.”²⁵⁴ As of the publication of this Report, the Chinese government has not announced his sentence.

* In addition to Dr. Sperling, other prominent examples of U.S. scholars banned from China include: the so-called “Xinjiang 13,” a group of U.S. scholars who wrote a book on Xinjiang published in 2004, and Perry Link and Andrew Nathan, co-editors of *The Tiananmen Papers*, a 2002 collection of leaked Chinese government documents on Beijing’s deliberations surrounding the Tiananmen Square massacre. Dr. Link, professor at University of California-Riverside, asserts the most concerning impact of China’s blacklist is its pressure on U.S. scholars to self-censor; for more information see Perry Link, “The Long Shadow of Chinese Blacklists on American Academe,” *The Chronicle of Higher Education*, November 22, 2013. <http://chronicle.com/blogs/worldwise/the-long-shadow-of-chinese-blacklists-on-american-academe/33359>; Daniel Golden and Oliver Staley, “China Banning U.S. Professors Elicits Silence from Colleges Employing Them,” *Bloomberg*, August 10, 2011. <http://www.bloomberg.com/news/2011-08-11/china-banning-u-s-professors-elicits-silence-from-colleges.html>.

In September, the Chinese government responded to Chinese citizens' support for Hong Kong's Umbrella Revolution with a crackdown on sympathizers and wide-scale censorship. (For more information on the demonstrations in Hong Kong, see Chapter 3, Section 4, "Hong Kong.") Some Chinese citizens assembled sympathy protests, and others shaved their heads and held umbrellas, distributing these images on microblogs to show unity with their compatriots.²⁵⁵ In response, the Chinese government has detained more than 40 individuals for distributing images and news of the demonstrations on microblogs, participating in sympathy protests, and attending a poetry reading inspired by the Umbrella Revolution.²⁵⁶ For example, a Chinese poet was arrested and sentenced to three years in prison for posting a photograph of himself with his head shaved and holding an umbrella in front of a Taiwan flag.²⁵⁷ In order to prevent images of the protests being shared online, the Chinese government heavily censored news from Hong Kong. For the first time, Beijing reportedly blocked Instagram, a popular mobile photograph sharing application.²⁵⁸ See "Internet and Social Media Censorship Controls" later in this section for more information on the tightening of information controls in China.

China's Media and Information Controls

China's media and information controls also have been tightened since President Xi took office, particularly China's censorship of private communications and social media. This tightening appears to be driven by a number of factors, including: the expanding reach of domestic media, more extensive foreign investigative reporting in China, the growing number of Chinese Internet users, and the rise of domestic social media platforms. The CCP views these dynamics as threatening its control over information and causing instability. China's media and information controls have direct implications for U.S. economic interests through its impact on U.S. company operations and profits both within China and abroad.

China's Domestic Media Controls

Although China already has one of the most restricted media environments in the world, President Xi has increased the government's censorship of domestic media, especially on the Internet. This censorship is designed to prevent negative coverage and to promote content that follows the CCP's established narrative of a particular story.²⁵⁹ The Chinese government can restrict domestic media coverage on virtually all topics but focuses on eliminating content related to autonomy in Xinjiang and Tibet, the Falun Gong spiritual group, writings of political dissidents, Taiwan independence, as well as unfavorable coverage of CCP leaders. Freedom House analysis of leaked state media censorship directives published by *China Digital Times*, a U.S.-based bilingual China news portal, shows President Xi, like his predecessor, has extensively applied this tactic.²⁶⁰

Chinese media over the last decade has increasingly challenged Beijing's tight grip on the media by pushing the government-instituted limits, particularly with its expanded investigative reporting

on sensitive topics. Largely due to the increased challenges posed by the proliferation of new media and Internet users driving conversations away from Beijing's preferred narrative, President Xi has employed more extensive controls on Chinese media personnel than did his predecessor.

For example, in June and July of this year, China's top media regulator, the State Administration of Press, Publication, Radio, Film and Television, issued a series of directives intended to further centralize and strengthen the CCP's control over domestic media outlets. One new rule forbids Chinese journalists from publishing critical news stories without official approval or outside of their assigned topics or regions.²⁶¹ Another regulation restricts any use of undefined state and commercial secrets, as well as "unpublicized" information the Party has not already released.²⁶² A third rule bans any cooperation between Chinese journalists and foreign news agencies.²⁶³ Finally, the Chinese government now requires journalists to sign a secrecy agreement with their employer to obtain press credentials.²⁶⁴ A single violation of any of these new rules could result in the loss of media credentials and employment. The regulation on cooperation with non-Chinese media personnel reflects the CCP's growing concerns with the role of foreign media in China obtaining and reporting on news China considers sensitive, such as the wealth of high-level Party officials.

Western organizations that track freedom of press issues worldwide find Chinese restrictions are becoming more stringent and more pervasive both within and outside mainland China.²⁶⁵ As of the publication of this Report, 30 journalists and 74 netizens* are imprisoned in China, according to Reporters Without Borders.²⁶⁶ China now ranks 175 out of 180 countries on Reporters Without Borders' 2014 World Press Freedom Index, two places behind Iran. The report also warned this year that "China's growing economic weight is allowing it to extend its influence over the media in Hong Kong, Macau and Taiwan, which had been largely spared political censorship until recently."²⁶⁷ In particular, media freedom in Hong Kong has deteriorated in 2014. Hong Kong journalists have faced increased intimidation, physical abuse, and cyber attacks from mainland China.²⁶⁸ For more information on the crackdown, see Chapter 3, Section 4, "Hong Kong."

China's Restrictions on U.S. and Foreign Media

The Chinese government has tightened restrictions on international media in China after several dramatic revelations by Western news organizations embarrassed Beijing in the run-up to the 2012 Chinese leadership transition. This highlighted the government's inability to isolate Chinese audiences from foreign perspectives. In response, Beijing has delayed and rejected foreign reporters' visa applications. The government has organized and conducted increasingly sophisticated cyber operations against foreign journalists in China and foreign media companies abroad. Beijing has allowed physical attacks on journalists within China and has used economic incentives and threats to encourage foreign media to

*A netizen is an Internet user who engages in discussions on social, political, and governmental topics online.

avoid coverage that might embarrass the government and Party.²⁶⁹ According to the Foreign Correspondents Club of China (FCCC),* 80 percent of respondents to the FCCC's 2014 Annual Reporting Conditions Survey believed their work conditions worsened or stayed the same since the previous year, a 10 percent increase over 2013. Half of respondents with Chinese assistants said their assistants faced harassment at least once, exceeding 2013 levels.²⁷⁰

Sarah Cook, senior research analyst for East Asia at Freedom House, testified to the Commission that pressure on foreign media over the past two years has "taken the form of delaying or rejecting visas for journalists known for hard-hitting reporting, especially on human rights or high-level corruption."²⁷¹ Since 2012, China has effectively expelled four leading China journalists—Austin Ramzy of the New York Times in 2014, Paul Mooney of Reuters in 2013, and Melissa Chan of Al-Jazeera and Chris Buckley of the New York Times in 2012—by denying them visas.²⁷² Before then, no accredited foreign correspondent had been expelled from China since 1998, when two journalists were accused of stealing state secrets.²⁷³ Since 2012, Bloomberg and the New York Times have reported visa delays after publishing stories on the amassed family wealth of Xi Jinping and then Premier Wen Jiabao; the New York Times has been unable to obtain visas for new employees—including Philip Pan, its chosen bureau chief in Beijing, who has been waiting for a visa since 2012.²⁷⁴

Foreign media companies operating in China are experiencing increased levels of cyber attacks. Dalphine Halgand, U.S. director of Reporters Without Borders, noted in her testimony to the Commission that members of the FCCC continue to be regular targets of cyber attacks designed to infect their computers with malware and spyware.²⁷⁵ Since 2008, China has also conducted a cyber espionage campaign against U.S. media organizations, with intrusions into the networks of the New York Times, the Washington Post, the Wall Street Journal, and Bloomberg.[†] China likely seeks to use information acquired through these intrusions to shape U.S. press coverage of China by intimidating U.S. journalists' sources in China and to gain advance notice about negative coverage of China before it is published.²⁷⁶

Another disturbing trend is the increasing physical harassment of foreign journalists on the ground in China. Ms. Halgand, in her testimony to the Commission, described the nature of such incidents:

In January this year, journalists covering the trial of cyber-dissident Xu Zhiyong were barred from the courtroom and were even prevented from filming outside when Xu's trial opened. BBC, Sky News and CNN crews outside were all pushed away violently by uniformed and plainclothes policemen. CNN reporter David McKenzie reported that he was manhandled and detained by police, who broke his crew's equipment. Two other journalists, Mark Stone and

* The Foreign Correspondent's Club is a professional group of international journalists reporting from China.

† For information on China's cyber espionage campaign against U.S. news agencies, see U.S.-China Economic and Security Review Commission, Chapter 2, Section 2, "China's Cyber Activities," *2013 Annual Report to Congress*, November 2013, pp. 243–265.

*Martin Patience, were also manhandled by police during coverage of the trial.*²⁷⁷

Finally, China is using economic pressure to induce U.S. and other foreign media organizations' compliance with its expanding information controls. According to the FCCC, the Chinese government has sought to pressure senior editors of France 24, ARD TV (Germany), and the Financial Times, along with various Japanese news organizations, to restrain reporting from their Beijing bureaus.²⁷⁸ In addition, after Bloomberg published its story on the wealth of Xi Jinping's family in 2012, Chinese officials ordered some Chinese businesses to stop subscribing to Bloomberg's financial data terminals, according to *The New York Times*.²⁷⁹ As a result, the company "reportedly suffered significant commercial harm from a drop in sales of its data terminals."²⁸⁰ In 2013, Bloomberg News stopped the release of an investigative report about a web of corruption linking one of China's wealthiest businessmen and high-level Chinese government officials. Bloomberg's Editor-in-Chief Matthew Winkler explained at the time that "the reporting . . . was not ready for publication," but several Bloomberg writers and editors blamed pressure from Beijing and Bloomberg's fear of reprisal.²⁸¹ As of the publication of this Report, the Bloomberg report has not been published. Although China currently comprises a small share of Bloomberg's core terminal market,* Bloomberg executives have emphasized that China is an important part of the firm's long-term strategy to expand into emerging markets.²⁸² The Bloomberg case demonstrates to other media companies that China is willing to use economic levers to enforce information controls.

Other U.S. media firms have suffered losses in revenue after China blocked access to online content tailored for the Chinese market. China cut off access to the New York Times' English- and Chinese-language websites in China after the organization published the story on then Premier Wen Jiabao's family members in 2012, causing heavy losses in revenue from advertisers and Chinese users.† In addition, Reuters' Chinese-language portal faced intermittent outages in November and December 2013 after reporting on the involvement of Wen's daughter in the JP Morgan hiring scandal.²⁸³ The Wall Street Journal's own English and Chinese-language websites were similarly censored during the same period as those of Reuters but were blocked again in China on May 31, days prior to the Tiananmen anniversary.²⁸⁴ As of the publication of this Report, the Wall Street Journal's websites remain blocked in China.

*Bloomberg only has an estimated 3,000 terminals in China, compared with 100,000 in the United States. The terminal market accounts for over three-quarters of Bloomberg's total revenue. Neil Gough and Ravi Somaiya, "Bloomberg Hits at Curb on Articles about China," *New York Times*, March 20, 2014. <http://www.nytimes.com/2014/03/21/business/international/bloomberg-should-have-rethought-articles-on-china-chairman-says.html>.

†In 2013, the New York Times launched a Chinese language, lifestyle-focused website that the Chinese government subsequently blocked. Foreign Correspondents' Club of China, "Position Paper on Working Conditions for Foreign Correspondents in China," September 2014. <http://www.fccchina.org/2014/09/12/fcc-position-paper-2014/>; Sarah Cook, *The Long Shadow of Chinese Censorship: How the Communist Party's Media Restrictions Affect News Outlets around the World* (Center for International Media Assistance, October 22, 2013), p. 18.

Internet and Social Media Censorship Controls

The inherent difficulty of monitoring and stopping the spread of information via new Internet and social media—such as Internet videos, blogs, and Twitter-like microblogs—and mobile phone messaging presents challenges to Beijing’s ability to manage public dissent. The speed and ease with which the Chinese public can access information and express opinions compresses the timeline for Beijing to respond to heated public demands. According to the official China Internet Network Information Center, as of June 2014, China has 632 million total Internet users—527 million of whom use the mobile Internet.²⁸⁵ The number of Internet users is expected to continue increasing rapidly; the Boston Consulting Group projects China will have 730 million users by 2016.²⁸⁶

Expansion of China’s Internet Control Apparatus

China’s Internet monitoring and censorship apparatus is vast—including at least ten government and CCP entities and more than two million personnel*—and redundant, with overlapping responsibilities throughout the system.²⁸⁷

Beijing’s difficulty stopping the spread of Internet video and news related to ethnic riots in Tibet in 2008 underscored for Beijing the need for stronger Internet controls. Then President Hu responded by shutting down YouTube, among other websites.²⁸⁸ After a brief loosening of Internet controls over the 2008 Beijing Olympics to assuage international concerns about China’s Internet censorship, following the games China redoubled its efforts to block non-Chinese websites. The government even expanded the pre-Olympics censorship apparatus. Prior to the 20th anniversary of the Tiananmen Square massacre, China temporarily blocked Twitter.²⁸⁹ Shortly thereafter, following the 2009 Xinjiang riots, Chinese authorities permanently blocked access to Twitter and Facebook.²⁹⁰

Beijing stepped up Internet censorship in 2011 after calls for Arab Spring-inspired † pro-democracy protests early that year in cities across China. Tightened Internet controls were part of a broader effort by Chinese officials to prevent or respond quickly to public criticism of CCP authority or legitimacy in the run-up to the 2012 leadership transition. Beijing also created a new central organization, the State Internet Information Office, to better coordinate its massive censorship apparatus.²⁹¹

After assuming China’s top leadership positions in 2012 and 2013, President Xi continued to strengthen China’s Internet control apparatus. In February 2014, President Xi established the new Central Internet Security and Informationization Leading Group.

*The Chinese government hires about two million people to monitor activity on microblogs. Estimates of CCP censors who are allowed to delete postings are between 20,000 and 50,000 people. In addition, private companies hire in-house censors to delete content; a source told Harvard researchers about two to three of these censors operate for every 50,000 users. “China Employs Two Million Microblog Monitors State Media Say,” BBC, October 4, 2013. <http://www.bbc.com/news/world-asia-china-24396957>; U.S.-China Economic and Security Review Commission, *Hearing on Stability in China: Lessons from Tiananmen and Implications for the United States*, written testimony of David Wertime, May 15, 2014.

†The call for public gatherings in China similarly used the Internet and social media to attempt to organize protests in over a dozen Chinese cities. Andrew Jacobs, “Chinese Government Responds to Call for Protests,” *New York Times*, February 20, 2011. <http://www.nytimes.com/2011/02/21/world/asia/21china.html>.

The group is tasked with enhancing Internet security, and according to President Xi, aims to “build [China] into a cyber power.”²⁹² Lu Wei, head of the State Internet Information Office and President Xi’s Internet czar, reportedly serves as director of the group’s administrative office, signaling the prioritization of Internet censorship as one of its main objectives.²⁹³ Although little is known about specific policy measures from the leading group, it is likely intended to centralize and strengthen Internet information controls.²⁹⁴

Over the last year, Beijing has initiated several campaigns targeting the spread of “rumors,”* “illegal” content, and pornography† on the Internet via microblogs, effectively crippling the platform. David Wertime, senior editor at *Foreign Policy*, explained to the Commission, “While the immediate loss of localized social control has long been a bugbear for Chinese authorities, the [P]arty appears to have realized somewhat belatedly that the social web, often highly critical of government, also threatened its ability to control its message.”²⁹⁵ As a result of President Xi’s campaign to eradicate online “rumors” and “illegal” content, Weibo users have declined rapidly over the last several years—as much as 70 percent of its users have left according to some estimates.²⁹⁶ Many of these users shifted to its rival, WeChat. After rapidly increasing its own user base, WeChat was similarly targeted in March 2014. Censors deleted dozens of WeChat accounts, many of which were politically liberal.²⁹⁷ In August, China passed new regulations on instant messaging platforms—largely targeted at WeChat—requiring real name registration for the first time and banning non-news accounts from sharing political information.²⁹⁸ As the top instant messaging platform with a user base of 393 million people, WeChat likely will suffer the same fallout as alternative microblog platforms emerge.

In recent years, growth of social media and its potential for creating instability has prompted the CCP to enact new rules and expand the ability to arrest individuals for posting unfavorable content. In December 2012, shortly after President Xi assumed leadership, China announced the passage of a new law allowing censors to delete social media posts or web pages containing “illegal” information and requiring Internet service providers to turn over information to law enforcement authorities.²⁹⁹ As part of Xi Jinping’s crackdown on Internet “rumors,” China in September 2013 introduced new regulations on online posts: if a post deemed offensive is reposted 500 or more times or viewed more than 5,000 times, the poster could face three years in prison.³⁰⁰ In April 2014, Chinese blogger Qin Zhihui was reportedly the first person to be arrested under these new regulations, guilty of “slander” and “picking quarrels and provoking troubles.” Hundreds more netizens have reportedly been detained during the crackdown on social media.³⁰¹

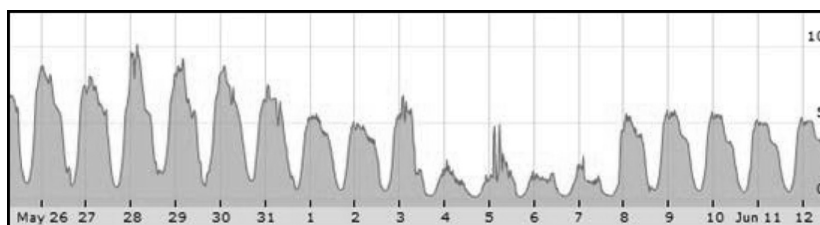
* “Rumors” are broadly defined as information disseminated online that does not follow the Party line. Megha Najagopalan, “China’s Rumor Crackdown Has Cleaned the Internet, Says Official,” Reuters, November 28, 2013. <http://www.reuters.com/article/2013/11/28/us-china-internet-idUSBRE9AR0BQ20131128>.

† The CCP’s campaign against pornography, set to last through November 2014, appears to target domestic media and netizens. Zhang Jialong, “China’s New Internet Crackdown: Not about Porn,” *Foreign Affairs*, April 16, 2014. http://www.foreignpolicy.com/articles/2014/04/16/chinas_new_internet_crackdown_not_about_porn.

Tiananmen Anniversary Disrupts Google Services in Tightest Internet Controls Yet

China disrupted access to Google products and services in the days around June 4, increasing its Internet censorship to the highest levels yet. The anonymous founder of GreatFire.org, a nonprofit organization that monitors Chinese censorship, said, “It would be wrong to say this is a partial block. It is an attempt to fully block Google and all of its properties.”³⁰² A review of Google’s traffic data shows a drop in usage during the most sensitive dates of the anniversary (see Figure 4). Google services remained partially accessible until May 30, when China’s estimated fraction of Google’s normalized worldwide traffic dropped more than fourfold in the days leading to June 4. By comparison, during the same period a year ago, access to Google services remained stable at pre-June 4 levels.³⁰³ Google websites remain blocked in China despite periodic openings of less than a day, as of the publication of this Report.

Figure 4: China’s Fraction of Google’s Worldwide Traffic Normalized, May 26–June 12, 2014



Note: The x-axis represents dates. The y-axis depicts China’s estimated fraction of Google’s worldwide traffic. The graphic does not depict real-time Google traffic, but reflects trends in usage.

Source: Google, Transparency Report Database—China.

China’s Internet Censorship Tools

The Chinese government is improving its efforts to scrutinize and block “sensitive” terms on Chinese social media platforms that have the ability to instantaneously reach large numbers of followers. China blocks information on the Internet and social media through three main methods: (1) shutting down access to websites through a filtering system—colloquially referred to as the “Great Firewall”; (2) blocking lists of keyword searches; and (3) manually removing text that passes through the first two methods deemed offensive to Chinese censors.³⁰⁴ Recent studies have found around 15 percent of total posts are deleted by censors; most are deleted within 24 hours.* According to a May 2013 Harvard University

*A University of Illinois-Chicago study found 16 percent of social media posts are blocked, while a Harvard University study found an average of 13 percent of posts are censored. Each study used a different data set. David Bamman, Brendan O’Connor, and Noah A. Smith, “Censorship and Deletion Practices in Chinese Social Media,” *First Monday* 17:3, March 5, 2012. <http://journals.uic.edu/ojs/index.php/fm/article/view/3943/3169>; Gary King, Jennifer Pan, and Margaret Roberts, “How Censorship in China Allows Government Criticism but Silences Collective Expression,” *American Political Science Review* 107:2 (May 2013): 6.

study, posts calling for collective action have the highest chance of being censored.³⁰⁵ Such censorship reflects the CCP's overarching goal to prevent coordinated protests and contain dissent locally. According to Xiao Qiang, founder and editor of the *China Digital Times*, China also blocks the following information: unfavorable coverage of high-level Chinese officials; challenges to the legitimacy of one-party rule; inner-workings of the Party and censorship system; political opposition groups such as the Falun Gong; political reporting not in sync with the CCP and Central Propaganda Department; and major historical events depicting the Party in a negative light.³⁰⁶

China's state and Party organs use a number of tools to keep the Internet and microblog platforms free of sensitive content, including: cyber intrusions on activists' e-mail and computer networks; surveillance of Internet-connected devices and networks; requirements for real-name registration of all websites; restrictions on Internet availability; domestic and foreign company compliance with law enforcement to provide information on netizens; and public outreach, such as employing users to push online content favorable to the Party.³⁰⁷ Ms. Cook noted to the Commission an increase in China's hiring of so-called "50 Cent Party" members who drive Internet and microblog conversation supportive of the CCP and harass alternative voices.*

The Chinese government also is using offline measures—cracking down on popular microbloggers and leaders of online opinion—to attempt to force netizens to self-censor. For example, Charles Xue, one of these influential online celebrities, had more than 12 million followers before being arrested on prostitution charges as part of the Weibo crackdown and forced to confess on national television for spreading microblog "rumors."³⁰⁸ The arrest led to a reduction in political commentary on Chinese social media, causing users to switch to other platforms.³⁰⁹

However, such measures have not succeeded in stamping out online dissent. Citing the increased number and frequency of deleted Weibo posts and usage of circumvention tools to access banned websites, Xiao Qiang testified to the Commission, "As I have followed Chinese social media, it has become clear to me that more and more netizens are less intimidated by repressive measures."³¹⁰ Internet users also have responded by shifting the language they use to talk about sensitive topics and bypass censors. According to Mr. Wertime, this strategy includes: using homophones, words that sound similar to those censored; homographs, words that look similar to those censored; and memes, repeated phrases or images that carry a particular cultural or political meaning.³¹¹

* These individuals, hired by central and local government authorities, reportedly receive 50 cents renminbi for each post. U.S.-China Economic and Security Review Commission, *Hearing on Stability in China: Lessons from Tiananmen and Implications for the United States*, testimony of Sarah Cook, May 15, 2014.

Impact of China's Internet and Media Controls on U.S. Companies

In the past five years, China's restrictive Internet and media controls are increasingly affecting U.S. affiliates. Twitter, Facebook,* and YouTube remain blocked in China in part due to their unwillingness to censor content and China's accusations that they foment unrest. In Beijing's view, these platforms' ability to organize groups of dissenters, demonstrated during the 2011 Arab Spring, present a direct threat to Party control. Liu Xiaoming, China's ambassador to the United Kingdom, said in an interview this year that these websites are blocked because they violate Chinese law and spread "rumors" unfavorable to the CCP.³¹² In September, Lu Wei, director of the State Internet Information Office, said that Facebook "cannot" gain access to China's market now or in the foreseeable future.³¹³ As a result, these U.S. firms have lost considerable business opportunities in China, and compliant Chinese "copycat" firms, such as Weibo, RenRen, and Youku, have taken their place.³¹⁴

In addition, U.S. companies are forced to decide whether to relocate their operations in an increasingly difficult business environment or self-censor. Google in 2010 redirected all search traffic from its mainland-based domain to its uncensored Hong Kong domain due to Chinese censorship and cyber intrusions on its software platforms based in China.†

In 2014, Reader's Digest self-censored an English-language novel planned to be printed in China for distribution in several Asia Pacific countries after Chinese authorities objected. Instead of relocating to a printer outside of mainland China and taking on added financial burden to avoid censorship, the company decided to cancel the publication.³¹⁵

Other companies are shelving their freedom of expression values in order to gain access to or maintain their operations in the Chinese market. LinkedIn said it would comply with Chinese censorship in order to enter the Chinese market. "We are strongly in support of freedom of expression. But it was clear to us that to create value for our members in China and around the world, we would need to implement the Chinese government's restrictions on content," a spokesman explained.³¹⁶ Over the last year, LinkedIn censored content for Chinese-language users beyond the Great Firewall—in this case English-language content for users based in the United States—stating "content posted from China IP addresses will be blocked globally to protect the safety of our members that live in China."³¹⁷

Apple Corporation, in 2013 removed applications, including anticensorship software, from its China software store. According

* Facebook maintains a small advertising sales office in China and has expressed interest in entering the Chinese market. Reed Albergotti, "LinkedIn Considers Changes after China Censorship Revealed," *Wall Street Journal*, September 3, 2014. <http://blogs.wsj.com/digits/2014/09/03/linkedin-considers-changes-after-china-censorship-exposed/>; Benjamin Pimentel, "Is Facebook About to Enter China?," *MarketWatch*, April 14, 2014. <http://www.marketwatch.com/story/is-facebook-about-to-enter-china-2014-04-14/>.

† Google retains research and development as well as sales offices in Beijing and Shanghai. E-mail correspondence with Google representative; Miguel Helft and David Barbosa, "Google Shuts Down China Site in Dispute over Censorship," *New York Times*, March 22, 2010. <http://www.nytimes.com/2010/03/23/technology/23google.html>.

to the application developer, Apple said Chinese authorities ordered the removal of the software “because it includes content that is illegal in China.”³¹⁸ Early this year, GreatFire.org released a report that found Microsoft’s Bing search engine “censors a vast amount of content that is hosted inside China and which is not censored by China-based internet companies like Baidu.”*³¹⁹ In response, Microsoft acknowledged errors and confirmed its policy of “[adjusting] search results to comply with local [Chinese] law or for quality or safety reasons such as child abuse or malware.”³²⁰

Implications for the United States

China’s domestic instability and how Beijing responds to dissent have implications for U.S. interests and U.S.-China relations. Domestic instability in China affects U.S. investment and production in China. A 2014 protest by 40,000 employees at a Nike supplier over low wages halted production for two weeks, leading to an estimated \$58 million in losses.³²¹ Protests at a Cooper Tire factory over the company’s potential sale in December 2013 cost a reported \$70 million.³²² Labor shortages and soaring living costs could increase such disputes in the future.

Moreover, in recent years, the increasing impact of Chinese media and Internet censorship on U.S. company operations and profits both within China and abroad has denied some U.S. businesses market access and forced other U.S. businesses to reduce activities in China, relocate operations, and self-censor. As a result, some U.S. firms are losing out on business opportunities in the world’s largest consumer market; others face the difficulty of balancing protections for freedom of expression while operating under China’s authoritarian regime.

The recent increased restrictions on freedom of expression and freedom of the press in China undermine the ability of U.S. news agencies and journalists to operate in China. U.S. journalists are facing more frequent harassment, visa restrictions, cyber attacks, and economic incentives and threats. Such policies force U.S. news agencies to reduce operations in China, thereby limiting U.S. news coverage of China.

Conclusions

- Heightened public awareness, the growth in Internet and social media use, and the lack of satisfactory channels for redress have led to a large number of “mass incidents” each year. Public outrage centers on land seizures, labor disputes, wide-scale corruption, cultural and religious repression, and environmental degradation. Such incidents challenge the legitimacy and competence of the Chinese Communist Party (CCP) and the government at all levels. Local governments have responded to such incidents with a mixture of repression and concessions.
- This year marked an escalation in violence linked to unrest in Xinjiang. Clashes between Uyghurs and police are increasingly ending in bloodshed, including the death of nearly 100 people in late July. In addition, attacks by militant Uyghur separatists are shifting from targeting government officials and buildings to at-

*Baidu is China’s most popular search engine.

tacking civilians and soft targets such as train stations and public spaces.

- In an effort to address the underlying causes of unrest, President Xi has launched robust anticorruption and counterterrorism campaigns, dedicated resources to address the public's environmental and health concerns, and proposed *hukou* system reforms.
- In response to rising levels of unrest, China's leaders are expanding and improving China's stability maintenance apparatus by streamlining domestic security policymaking, strengthening forces responsible for maintaining internal security, tightening the Party's control over legal institutions, significantly increasing funding for public security, and using information controls to clamp down on dissent.
- With the entire legal apparatus under the CCP's control, local and national officials contain unrest by limiting citizens' access to legal counsel and impartial trials, restricting the ability of citizens to obtain redress for grievances through official channels, and detaining government critics through legal and extralegal means. Although President Xi has implemented several substantial reforms and hinted at others, the same legal mechanisms to target dissent likely will persist, and meaningful reform will remain elusive.
- President Xi has implemented a campaign not seen in China since the 1970s against individuals expressing dissent. In addition to targeting outspoken dissidents, President Xi has cracked down on popular online commentators. This year's 25th anniversary of the Tiananmen Square massacre marked the harshest crackdown on dissenters yet and the tightest online censorship implemented thus far.
- Although China already has one of the most restricted media environments in the world, since President Xi took office, China has increased censorship of domestic and foreign media. China's information controls directly affect U.S. media companies and journalists with China operations through visa restrictions, cyber attacks, physical harassment, favoritism, and threats. Tightened media controls also affect Chinese citizens who face increasing difficulty accessing information sources that express alternative views from the CCP.
- Beijing likely will take calculated measures to strengthen Internet controls. However, China probably will struggle with the rapid and unpredictable development of Internet-based applications and technologies that could help users defy Beijing's current controls. Furthermore, the increasing number and sophistication of Internet users in China makes Beijing's approach vulnerable to public backlash when authorities restrain users' access and network performance, especially in sectors where the Internet has become a critical component of economic growth and commerce.

ENDNOTES FOR SECTION 3

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RECOMMENDATIONS

China's Military Modernization

The Commission recommends:

- Congress fund the U.S. Navy's shipbuilding and operational efforts to increase its presence in the Asia Pacific to at least 67 ships and rebalance homeports to 60 percent in the region by 2020 so that the United States will have the capacity to maintain readiness and presence in the Asia Pacific, offset China's growing military capabilities, and surge naval assets in the event of a contingency.
- Congress appoint an outside panel of experts to do a net assessment of the Sino-American military balance and make recommendations to Congress regarding the adequacy of the current U.S. military plans and budgets to meet the security requirements of the United States in the Pacific.
- Congress ensure the adequacy of open source collection, production, and dissemination capabilities vis-à-vis security issues involving China.
- Congress direct U.S. Pacific Command to brief Congress on the People's Liberation Army Navy's participation in the Rim of the Pacific-2014 exercise.
- Congress direct the Department of Defense to provide to Congress its purpose and rationale for its military-to-military engagement planning with the People's Liberation Army, including proposed programs already discussed with the People's Liberation Army.
- Given the importance of understanding China's nuclear and conventional ballistic missile programs, Congress direct the Government Accountability Office to provide an unclassified report, with a classified annex, that examines China's nuclear and conventional ballistic missile capabilities, intentions, and force structure.

China's Domestic Stability

The Commission recommends:

- Members of Congress reaffirm their support for human rights, freedom of expression, and rule of law in China and raise citizens' rights to freedom of speech, expression, and religion in their meetings with Chinese government officials.

- Congress support the efforts of the U.S. Agency for International Development, U.S. Department of State, and the National Endowment for Democracy to strengthen governance and improve the well-being of Chinese citizens through capacity-building training programs and exchanges.
- Congress closely monitor U.S.-China counterterrorism cooperation to ensure the United States is not endorsing or providing any support for China's suppression of Chinese citizens, including Uyghurs, Tibetans, and other ethnic minorities.
- Congress continue to support and fund media outlets that promote the free flow of information and Internet freedom within China.

CHAPTER 3

CHINA AND THE WORLD

SECTION 1: CHINA AND ASIA'S EVOLVING SECURITY ARCHITECTURE

Introduction

This section discusses China's security interests in Asia and explores how Northeast Asia, Southeast Asia, and Oceania are responding to China's growing capabilities, influence, and assertiveness in the region. It also examines how the regional security dynamics in East Asia are shifting, as well as the implications of this evolving security architecture for U.S. alliances and partnerships. It is based on a March Commission hearing on changing security dynamics in East Asia and Oceania; a Commission fact-finding trip to South Korea and Australia, and Commission meetings in Washington, DC, with embassy officials from Asian countries; as well as research conducted throughout the year.

China's Approach to Regional Security

Beijing views competing territorial claims as obstacles to the dominant position China seeks in East Asia. Using a variety of foreign and domestic policy tools, Beijing is attempting to expand a sphere of influence in its peripheral regions. Recent public statements by high-level Chinese officials suggest China is departing from its traditional low-profile foreign policy to "hide capacities and bide time." In November 2013, for example, Chinese State Councilor Yang Jiechi gave a speech introducing a new role for China as a "major responsible country," one that is "more actively engaged in international affairs."¹ As it seeks to take on this role, China's influence in Asia is deepening and the security architecture of Asia is adjusting to this change. For more information on China's more active foreign policy, particularly regarding states on its periphery, see Chapter 2, Section 1, "Year in Review: Security and Foreign Affairs."

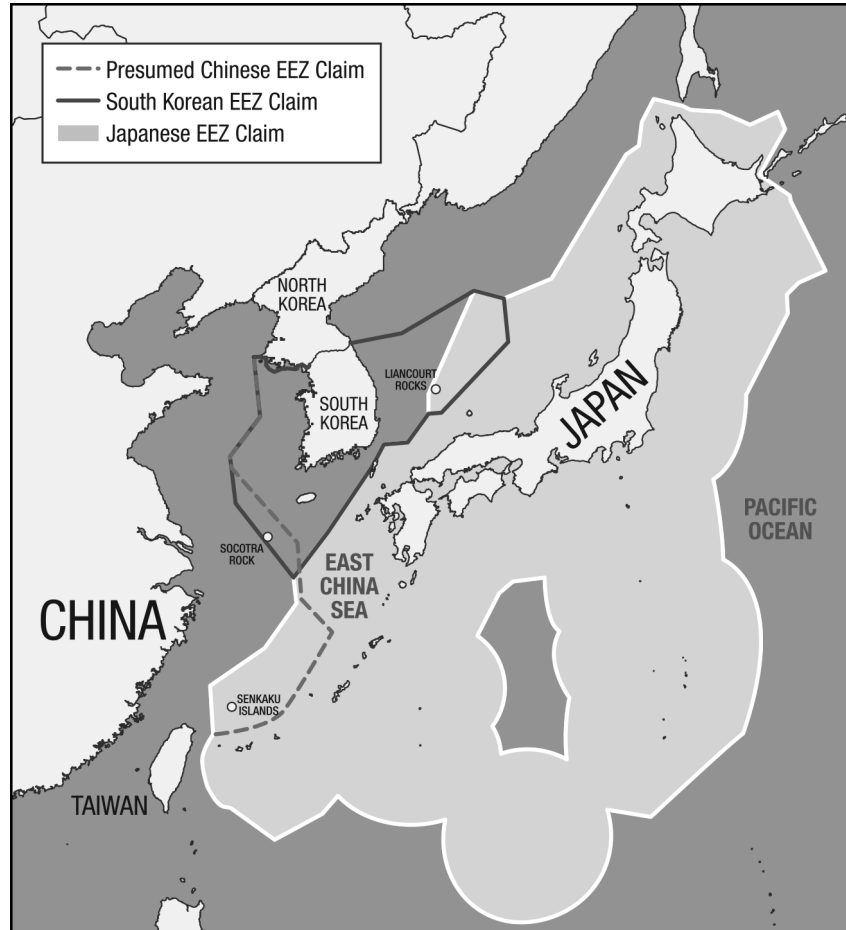
China's Multifaceted Strategy to Defend and Advance Its Sovereignty Claims

Although China has settled most of its land border disputes, it is engaged in intense maritime disputes in its near seas—the Yellow Sea, East China Sea, and South China Sea. Due to their strategic, historical, and resource value, Beijing's near seas are "of paramount importance to a China that feels acutely wronged by history, has largely addressed its more basic security needs, and

craves further development,” according to Andrew S. Erickson, a China expert at the U.S. Naval War College.² In the East China Sea (see Figure 1), the Senkaku Islands disputed by Japan and China (which calls them the Diaoyu Dao) are a focal point for tensions. In the South China Sea (see Figure 2), China claims waters or land features extending as far as 800 nautical miles from the coast of mainland China based on a variety of factors such as “historic rights.” Taiwan, Vietnam, the Philippines, Malaysia, and Brunei object to all or part of China’s claim.*

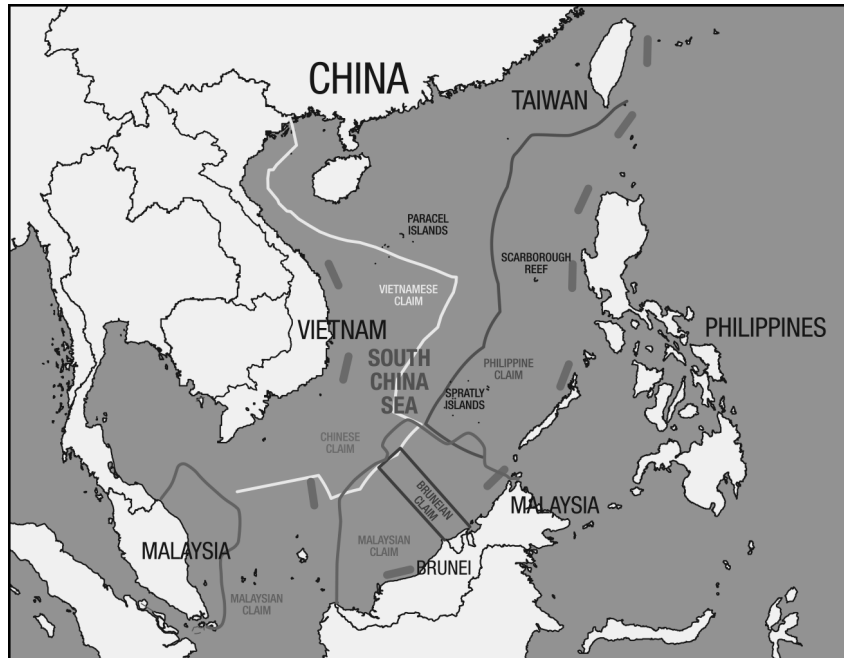
* China denotes its South China Sea claim on maps with a “u-shaped line” comprised of nine dashes along the coasts of South China Sea littoral states. More recently China’s official maps have included a tenth dash around its South China Sea claim, delineating China’s claim over Taiwan. The meaning of the dashes and the specificity of China’s claim within the dashes remains unclear. Jonathan G. Odom, “A China in a Bull Shop? Comparing the Rhetoric of a Rising China with the Reality of the International Law of the Sea,” *Ocean and Coastal Law Journal* 17:2 (2012): 234–236, 247; Zhiguo Gao and Bing Bing Jia, “The Nine-Dash Line in the South China Sea: History, Status, and Implications,” *American Journal of International Law* 107:1 (January 2013): 98–124; and Euan Graham, “China’s New Map: Just Another Dash?” *Strategist* (Australian Strategic Policy Institute blog), September 17, 2013. <http://www.aspistrategist.org.au/chinas-new-map-just-another-dash/>. For more information on China’s maritime disputes in the East and South China Seas, see Chapter 2, Section 3, “China’s Maritime Disputes,” of the Commission’s 2013 Annual Report.

Figure 1: East China Sea Map



Source: U.S. Navy, *Maritime Claims Reference Manual*, 2014; Flanders Marine Institute, "EEZ Boundaries," <http://www.marineregions.org/eezsearch.php>. Commission staff approximation of maritime claims. Names and boundary representation are not authoritative. The EEZ approximations shown are derived from the straight baseline claims of China, Taiwan, South Korea, and Japan, none of which is recognized by the United States. Japan's EEZ claim also includes an additional region further east, not shown here.

Figure 2: South China Sea Map



Source: U.S. Department of Energy, South China Sea Maritime Claims Map, 2013. <http://www.eia.gov/countries/regions-topics.cfm?fips=scs>; Gregory Poling, *The South China Sea in Focus: Clarifying the Limits of Maritime Dispute* (Center for Strategic and International Studies, July 2013). http://csis.org/files/publication/130717_Poling_SouthChinaSea_Web.pdf. Commission staff approximation of maritime claims. Names and boundary representation are not authoritative. Both Vietnam and the Philippines claim the Spratly Islands independently of their maritime claims.

In testimony to the Commission, Bonnie Glaser, senior adviser for Asia at the Center for Strategic and International Studies, described China's incremental approach to vindicating its territorial claims and advancing its dominance in the region: "Through a steady progression of small steps, none of which by itself is a *casus belli*, Beijing seeks to gradually change the status quo in its favor."³ These small steps are diverse and wide-ranging. They include physical measures to demonstrate sovereignty over China's maritime claims, such as maritime patrols and land reclamation and civil construction projects in the South China Sea.⁴ They also include administrative and legal measures to assert sovereignty, such as the enactment in 2014 of fishing regulations requiring foreign vessels to request permission to enter Chinese-claimed waters and the establishment in 2013 of an Air Defense Identification Zone (ADIZ) over the disputed East China Sea (see Chapter 2, Section 1, "Year in Review: Security and Foreign Affairs," for a discussion of the ADIZ).⁵

The expanded capabilities and growing power of China's People's Liberation Army (PLA) are another key component of China's multifaceted strategy to protect its sovereignty claims. China's military modernization and activities seek to expand China's mari-

time perimeter out to its second island chain* approximately 1,800 nautical miles from China. Controlling China's maritime periphery improves China's abilities to (1) deter Taiwan's moves toward independence, reverse Taiwan's actions should that policy fail, and deter, delay, and deny any U.S. intervention in such a scenario; (2) defend against an enemy blockade and strikes on important political, economic, and military targets along China's coast and into the interior; and (3) advance and defend China's maritime territory, sovereignty, and interests, including access to natural resources.⁶

Finally, the market dependencies of many East Asian countries on China—the result of China's deep integration into regional manufacturing supply chains—afford Beijing greater leverage in pursuing regional security interests. At the Commission's March 2014 hearing, several witnesses expressed concern about China's willingness to utilize coercive economic measures to extract political or security concessions from its Asian neighbors.⁷ One scholar describes China's employment of economic levers as the “selective application of economic incentives and punishments designed to augment Beijing's diplomacy.”⁸

An Increasingly Assertive China Seeks a New Regional Security Architecture

Because a relatively stable external environment allows China to focus on domestic economic development, Beijing likely will continue to be a free-rider in the U.S.-underwritten global security system.⁹ Although emboldened by its progress in shifting regional security dynamics, Beijing seeks to manage external perceptions that could elevate concerns about China's intentions and lead regional actors to unite against China or seek intervention from outside powers, especially the United States. However, in the past five years, China has exerted diplomatic clout and economic influence in the region, backed by rapidly growing military capabilities. These factors have enabled China's increasingly assertive pursuit of its security interests in East Asia. As China has become more confident in its capabilities, it has already begun to change the regional balance of power in its direction.

Moreover, senior Chinese leaders in the past year have begun to challenge the U.S. position as the primary power in East Asia by promoting a new Asian security architecture led by Asian countries, with China in the leading role.¹⁰ Upon taking the chairmanship of the Conference on Interaction and Confidence Building Measures in Asia for three years in May 2014, Beijing turned a low-profile multilateral venue into an opportunity to articulate its vision for this new security architecture.† In a speech addressing

*See Figure 2 in Chapter 2, Section 2, “China's Military Modernization,” for a depiction of China's first and second island chains and for a more detailed description of the concept.

†The Conference on Interaction and Confidence Building Measures in Asia (CICA) was initially proposed and convened by Kazakhstan in 1992 as a mechanism to discuss the changing security dynamics following the conclusion of the Cold War. Today, CICA's membership includes 26 members from the Middle East, Central Asia, South Asia, and Southeast Asia, and a few observer states and organizations. The United States is a CICA observer state. Secretariat of the Conference on Interaction and Confidence Building Measures in Asia, “About CICA.” http://www.s-cica.org/page.php?page_id=7&; Mu Chunshan, “What is CICA (And Why Does China

the conference, Chinese President Xi Jinping stated, “We need to rely on the people in Asia to run Asia’s affairs, deal with Asia’s problems, and uphold Asia’s security. The people in Asia have the capability and wisdom to achieve peace and stability in Asia through enhanced cooperation.”¹¹

China’s increasingly forceful approach to regional security, though, could constrain its future policy options in Asia. Robert Sutter, professor of practice of international affairs at George Washington University, testified to the Commission that China’s assertiveness:

*... puts nearby governments on guard and weakens Chinese regional influence. It reminds China’s neighbors of [its] longstanding and justified Cold War reputation as the most disruptive and domineering force in the region. ... [China’s] practice of promoting an image of consistent and righteous behavior in foreign affairs is so far from reality that it grossly impedes effectively dealing with disputes and differences with neighbors and the United States.*¹²

Some observers suggest China’s behavior also is narrowing the range of U.S. policy options in East Asia. According to former Australian defense department official Hugh White, currently a professor at Australia National University:

*By using direct armed pressure in these disputes, China makes its neighbors more eager for U.S. military support, and at the same time makes America less willing to give it, because of the clear risk of a direct U.S.-China clash ... Beijing is betting that, faced with [the choice between deserting its friends and fighting China], America will back off and leaves its allies and friends unsupported. This will weaken America’s alliances and partnerships, undermine U.S. power in Asia, and enhance China’s power.*¹³

In a 2013 speech, former Australian Prime Minister Kevin Rudd speculated on the possible outcomes of a continued shift in power: “The truth is that overwhelming U.S. military power combined with continued significant U.S. economic power lies very much at the fulcrum of the stability of the post-war order. And if China begins to replace the American fulcrum, the legitimate question from us all is what sort of alternative regional and global order would China seek to construct in its place.”¹⁴

At the 2014 U.S.-China Strategic and Economic Dialogue in Beijing, statements of senior officials reflected the competitive yet intertwined nature of the U.S.-China security relationship. While contrasting the positive outcomes of a cooperative U.S.-China relationship against the “disastrous” outcome of confrontation between the two countries, President Xi alluded to China’s growing ambitions for the operating areas and missions of the PLA, stating, “The vast Pacific Ocean has ample space to accommodate two great nations.”¹⁵ U.S. Secretary of State John Kerry acknowledged the differences between the two countries but also expressed confidence in

Care about It?” *Diplomat*, May 17, 2014. <http://thediplomat.com/2014/05/what-is-cica-and-why-does-china-care-about-it/>.

managing these differences: “I can tell you that we are determined to choose the path of peace and prosperity and cooperation, and yes, even competition, but not conflict. When the United States and China work with each other, we both stand to gain a great deal.”¹⁶

Yet, the manner in which China has pursued its regional security interests in the past year has undergone a troubling shift. In the past, Beijing sought to frame its assertiveness as a retaliatory response to provocative neighboring states. Since the announcement of its East China Sea ADIZ in late 2013, however, Beijing has taken provocative actions in support of its maritime claims without the kind of public rationalization that may have been expected in years prior. According to Ely Ratner, senior fellow and deputy director of the Asia-Pacific Security Program at the Center for a New American Security, this recent shift suggests the United States has not only failed to deter assertive Chinese behavior, but also allowed a permissive environment in which China is comfortable escalating its actions. Beijing is “incurring few tangible costs for its assertiveness and appearing to believe (perhaps rightly so) that it can ride out whatever regional criticism arises in response. . . . Acknowledging Chinese behavior for what it is—undeterred and unapologetic assertiveness—will necessitate a more serious American response than we have seen to date.”¹⁷

In testimony to the Senate Foreign Relations Committee, Aaron L. Friedberg, professor of politics and international affairs at Princeton University, underscored the need for continued U.S. involvement in matters of East Asian security:

*In the absence of an effective American response, China may yet be able to successfully pursue a divide and conquer strategy: intimidating some of its neighbors into acquiescence while isolating and demoralizing others. Indeed, this appears to be precisely what Beijing is now trying to do: reaching out to Washington and proclaiming its desire to form a “new type great power relationship” with the United States, while at the same time ratcheting up pressure on key targets, especially U.S. allies.*¹⁸

Shifting Security Dynamics in Northeast Asia

Since the mid-20th century, the U.S. alliances with Japan and South Korea have served as the pillars for the Northeast Asian security architecture, and North Korean instability has been the primary focal point of regional threat perceptions. However, China’s rise is altering the regional security environment, prompting discussion among the United States, Japan, and South Korea on how to update their alliances for the 21st century. U.S. Deputy Assistant Secretary of Defense for East Asia David Helvey testified to the Senate Foreign Relations Subcommittee on East Asian and Pacific Affairs:

We are actively working with Japan and [South Korea] to transform and modernize our alliances in ways that ensure they meet our original security goals of assurance and deterrence while also building our alliances into platforms for broader cooperation on traditional and nontraditional secu-

*rity challenges, both in Asia and globally. ... In recent years, and in concert with the senior leaders of both countries, we have developed for each alliance a forward-looking agenda based on enhancing security, increasing the ability of our militaries to work together seamlessly, and building our allies' capacity to contribute to regional and global security.*¹⁹

The challenge for Washington as it seeks to modernize its Northeast Asian alliances will be to balance differing sets of security perceptions and priorities in Tokyo and Seoul as well as manage simmering political tensions stemming from its troubled past. The region's divisions over interpretations of its history have aggravated both China-Japan relations and South Korea-Japan relations. As long as China and South Korea perceive a lack of ongoing sincere contrition by Japan for its colonial and wartime actions, political rifts will persist in Northeast Asia that will hinder the United States from bringing two of its most crucial allies together on regional security issues.*²⁰

This subsection considers in broad terms the impact China has on U.S. alliances in Northeast Asia. For a fuller consideration of the Korean Peninsula, see Chapter 3, Section 2, "Recent Developments in China's Relationship with North Korea." For a comprehensive treatment of Taiwan issues, see Chapter 3, Section 3, "Taiwan."

China and Security in Northeast Asia

China's Chief Security Interests in Northeast Asia

China's two chief security interests in Northeast Asia are ensuring stability on the Korean Peninsula and securing Chinese maritime claims in the East China Sea. Both are central to China's objective of a strong, stable homeland bordered by a secure periphery.²¹

To somewhat varying degrees, China, Japan, and South Korea share a common security interest in the stability of North Korea, a state that is inscrutable to outsiders and engages in destabilizing rhetoric and actions. Given their relatively sizable land borders with North Korea, China and South Korea would be heavily affected by refugee flows, potentially in the millions, in the event of a crisis on the Peninsula. Lacking the same proximity to North

* Visits by senior Japanese leaders to Tokyo's Yasukuni Shrine, which honors Japan's war dead, are chief among the issues of historical memory that divide the region. Another major difference is the perception of Japan's contrition over "comfort women," Asian women—mostly Korean—forced into sexual slavery at Japanese military brothels during World War II. Other divisive issues that persisted during 2014 include differences in secondary school history curricula, particularly between China and Japan; and the memorializing by China and South Korea of Ahn Jung-geun, a Korean resistance figure who assassinated a four-time Japanese prime minister and governor of Japanese-occupied Korea. Jennifer Lind, "When History Humiliates Former Enemies," *CNN*, January 3, 2014. <http://www.cnn.com/2014/01/03/opinion/lind-japan-war-memories/index.html>; Zheng Wang, "History Education: The Source of Conflict between China and Japan," *Diplomat*, April 23, 2014. <http://thediplomat.com/2014/04/history-education-the-source-of-conflict-between-china-and-japan/>; Esther Felden, "Former Comfort Woman Tells Uncomforting Story," *Deutsche Welle*, February 9, 2013. <http://www.dw.de/former-comfort-woman-tells-uncomforting-story/a-17060384>; and Yuka Hayashi and Alexander Martin, "Japan Finds Tokyo, Seoul Agreed on Comfort Woman Apology," *Wall Street Journal*, June 20, 2014. <http://online.wsj.com/articles/japan-finds-tokyo-seoul-agreed-on-comfort-women-apology-14032583>

Korea, Japan does not share this specific concern with China and South Korea; nevertheless, it views Pyongyang's continued development of ballistic missiles and nuclear arms as potential sources of regional instability.²²

China approaches its contested maritime claims with Japan and South Korea quite differently. Whereas China bitterly contests ownership of the Senkaku Islands with Japan, it tends to downplay its dispute with South Korea over Socotra Rock (see Figure 1), known in China as Suyan Jiao and in Korea as Ieodo.

- The Senkaku Islands dispute has intensified since 2010, reflected in the increased air and maritime presence of both China and Japan near the islands and in deteriorating China-Japan political relations. China's 2012 white paper entitled "Diaoyu Dao, an Inherent Territory of China," with chapters entitled "Japan Grabbed Diaoyu Dao from China," "Backroom Deals Between the United States and Japan Concerning Diaoyu Dao are Illegal and Invalid," and "Japan's Claim of Sovereignty over Diaoyu Dao is Totally Unfounded," are illustrative of China's views on the Senkaku Islands.²³
- Socotra Rock, on which South Korea built an ocean research station in 2003, is only a minor point of contention between China and South Korea because it falls within their overlapping claimed Exclusive Economic Zones (EEZs). Since states enjoy only economic rights, not full sovereignty, in an EEZ, Socotra is not technically a matter of territorial dispute. Furthermore, as a submerged feature in the Yellow Sea, the rock cannot be claimed as territorial land under the United Nations Convention on the Law of the Sea.* Since the mid-2000s Beijing has officially affirmed several times that "China and [South Korea] have a consensus on the Suyan Jiao, that is, the rock does not have territorial status, and the two sides have no territorial disputes."²⁴

China's Contrasting Security Relationships with Japan and South Korea

The differing intensities of the Senkaku Islands dispute and the Socotra Rock dispute are embodied in China's contrasting security relationships with the two Northeast Asian powers—strained and antagonistic with Japan and generally non-confrontational with South Korea. In China's view, South Korea's regional priorities largely contribute to China's interest in maintaining stability on the Peninsula. However, China perceives Japan's recent security reforms and pursuit of a more muscular military as destabilizing and potentially threatening China's ability to achieve its territorial ambitions in the East China Sea.²⁵

*Under the United Nations Convention on the Law of the Sea, a coastal state is entitled to an EEZ, a 200 nautical mile zone extending from the coastline of its mainland and from the coastline of any territorial land features. Within this zone, the state enjoys "sovereign rights" for economic exploitation and exploration, but not full sovereignty. United Nations Convention on the Law of the Sea, Article 56: Rights, jurisdiction, and duties of the coastal state in the exclusive economic zone. http://www.un.org/depts/los/convention_agreements/texts/unclos/part5.htm; United Nations Convention on the Law of the Sea, Article 121: Regime of islands. http://www.un.org/depts/los/convention_agreements/texts/unclos/part8.htm.

In addition to managing its relations with the Northeast Asian powers differently, China also seeks to thwart the potential for a more formal U.S.-Japan-South Korean alliance in the region. Without formal alliances, China is a “lonely” rising power, according to John Lee, fellow and adjunct professor at the University of Sydney. This concept is especially applicable in Northeast Asia, home to two of the United States’ strongest alliances. At a meeting with Commissioners in Washington, DC, Dr. Lee noted Beijing’s proposed “new type of major country relationship” with the United States reflects its interest in simplifying the strategic landscape, particularly one in which China perceives the odds are stacked against it. Just as China seeks to divide Southeast Asia in order to provide it more room for policy maneuver, a divided Northeast Asia—one with limited U.S. influence and security guarantees—is also strategically favorable for China.

- Published Chinese views on China-Japan security relations encompass a mix of suspicion, alarm, and concern—especially on the issues of Japan’s increasingly robust defense and security establishment, the development of the U.S.-Japan alliance, and perceived lack of Japanese atonement over its wartime past. One quasi-authoritative Chinese media source put it bluntly: “Japan must adopt the correct attitude toward historical issues; stop provocative acts; and take concrete action to win the trust of Asian neighbors and the international community.”²⁶ Lieutenant General Wang Guanzhong, Deputy Chief of the PLA General Staff Department, also captured these sentiments in off-script remarks at an international conference for defense and security leaders in June 2014. Referring to speeches made earlier in the conference by Japanese Prime Minister Shinzo Abe and U.S. Defense Secretary Chuck Hagel, he said, “[The United States and Japan] supported and encouraged each other in provoking and challenging China . . . who is really stirring up trouble and tension in the region and who is initiating disputes and spat? . . . From the speeches of Mr. Abe and Mr. Hagel, we know who is really assertive. Assertiveness has come from the joint actions of the United States and Japan, not China.”²⁷
- Conversely, official Chinese views on China’s relations with South Korea—which in the words of the Chinese Ambassador to South Korea, Qiu Guohong, “have never been better”—reflect an interest in continued cooperation between Beijing and Seoul on regional security.²⁸ As President Xi made his first visit to South Korea as president in July 2014, he authored an article striking an optimistic tone on China-South Korea security relations: “I have exchanged views many times with [South Korean] President Park Geun-hye on this issue, and we have agreed that our two countries should take on responsibility and work constructively for lasting peace and stability in our region.”²⁹ President Xi’s speech at Seoul National University, entitled “Jointly Create a Beautiful Future of China-South Korea Cooperation and Accomplish the Great Cause of Asia’s Revitalization and Prosperity,” emphasized his desire for warm relations between the two countries.³⁰ As China appears

to draw South Korea closer, China may also seek to drive wedges between South Korea and the United States as well as between South Korea and Japan.³¹

Japan and South Korea: Security Responses to China

Japan and South Korea are responding to China's actions and rhetoric in different ways. Whereas Japan is balancing against China by boosting its own capabilities and reaffirming its alliance with the United States, South Korea appears to be pursuing a hedging strategy by cultivating its security relationships with not only the United States but with China as well.³²

Japan

China's ongoing assertions of its East China Sea claims have an acute effect on Japan's security calculus. In response to a changing security environment in Northeast Asia, Tokyo has sought to more vigorously safeguard its national interests and more fully participate in international security affairs through a "Proactive Contribution to Peace" policy.³³ To that end, Tokyo is pursuing the following measures.

*Reforming Japan's legal and political framework to facilitate U.S.-Japan defense cooperation and the flexible employment of Japan's armed forces.*³⁴ Under Prime Minister Abe, Japan has made several institutional and legal reforms that could allow more robust participation in its alliance with the United States and in efforts to preserve international peace and security.

- Prime Minister Abe's Cabinet in July 2014 issued a reinterpretation of its constitution to allow Japan to exercise "collective self-defense."* Previously, under its self-imposed prohibition against "collective self-defense," Japan had no ability to come to the defense of allies such as the United States unless Japan itself was under attack. Under a constitutional reinterpretation, Japan could engage in a wider range of joint military activities with the United States in the East and South China Seas. Furthermore, Japanese Aegis Ballistic Missile Defense-capable KONGO-class destroyers could for the first time formally provide air defenses for U.S. ships conducting missile defense against North Korean missiles.³⁵
- The Japanese government in late 2013 announced the establishment of its first-ever National Security Council and National Security Strategy, and separately, the passage of a state secrecy law intended to strengthen the protection of classified information. For the United States, these are strong measures that will contribute to the improvement of its defense and information-sharing partnership with Japan.³⁶

*As this Report went to print, the Cabinet decision on collective self-defense has yet to undergo deliberation in the Diet. The Cabinet decision requires the Diet to make amendments to several existing laws in order to take full effect. Yoshisuke Inuma, "Abe Finding It Hard to Get His Way on Defense," *East Asia Forum*, August 19, 2014. <http://www.eastasiaforum.org/2014/08/19/abe-finding-it-hard-to-get-his-way-on-defence/>; Michael J. Green and Nicholas Szechenyi, *Japan Takes a Step Forward on Defense Policy Reform* (Center for Strategic and International Studies, July 2, 2014). <http://csis.org/publication/japan-takes-step-forward-defense-policy-reform>.

- Japan in April 2014 eased its self-imposed ban on arms exports. This policy will facilitate Japan's participation in multinational arms development projects—such as the U.S.-led effort to develop the F-35 Joint Strike Fighter, of which Japan intends to purchase 42. The policy also will help improve and expand Japan's defense industry. Unable to recoup development costs on the international market under the previous policy, Japanese defense companies under the arms export ban had difficulty pursuing advanced military technologies.³⁷ Lastly, the new policy offers the potential for Japan to provide military equipment and services to certain U.S. allies and security associates and provides Tokyo with another means of security cooperation with potential partners across Asia.

*Building a “more robust alliance and greater shared responsibilities” with the United States.*³⁸ During an October 2013 Security Consultative Committee meeting of the U.S. Secretaries of State and Defense and their Japanese counterparts, the United States and Japan outlined goals to strengthen and enrich their alliance, including strengthening bilateral security and defense cooperation, increasing regional engagement, and realigning U.S. forces in Japan.³⁹ In testimony to the Commission, James L. Schoff, senior associate in the Asia Program at the Carnegie Endowment for International Peace, proposed an overarching concept to guide the United States and Japan as they redefine the contours of their alliance. A capabilities-based approach to the U.S.-Japan alliance that would rely on the United States for front-end military activities and Japan for rear area support activities, according to Mr. Schoff, would “enhance alliance flexibility and better integrate alliance cooperation than the current approach without carving new—potentially politically sensitive—overseas missions for Japan's Self-Defense Forces [JSDF].”^{* 40}

Developing a network of regional security partners, especially in Southeast Asia. China's growing military capabilities and assertiveness in the region are driving many Asian countries to strengthen security ties with one another. Since late 2012, Japan has made its relationship with Southeast Asian states a hallmark of its foreign and security policy. One key aspect of Japan's relationships with Southeast Asian states is providing capacity building assistance on maritime safety and security—an indication of the common security goals Japan and Southeast Asia face with regard to China in the maritime realm.⁴¹

Bolstering the capabilities of the JSDF. In line with its self-defense mission, the JSDF's order-of-battle focuses on deterring and defending an attack against the homeland.⁴² While the mere existence of the JSDF and U.S.-Japan alliance once may have been sufficient for the purposes of deterrence, Mr. Schoff testified this is no longer the case:

*The rear area support activities Mr. Schoff proposes for Japan would include “ISR [intelligence, surveillance, and reconnaissance] and domain awareness; more collaborative planning; cybersecurity; electronic warfare; antisubmarine warfare; missile defense; and more direct logistical support.” James L. Schoff, *How to Upgrade U.S.-Japan Defense Cooperation* (Carnegie Endowment for International Peace, January 16, 2014). <http://carnegieendowment.org/2014/01/16/how-to-upgrade-u.s.-japan-defense-cooperation/gykq>.

*[Tokyo] now realizes that lower thresholds of conflict might only be deterred if it shows willingness and ability to fight, and the object of this deterrence is China in the East China Sea. Moreover, Japan needs to be able to project force in a flexible manner to adapt to unpredictable situations in case deterrence fails, as well as to give Japan's leaders different options for controlling escalation. Of course, Japan is not just looking to increase its own military capability as a means to thwart Chinese intimidation and so-called gray zone conflict (i.e., a state of neither peace nor war, such as skirmishes between Coast Guard vessels). Boosting the military is also seen as responding to U.S. requests for more proactive Japanese contributions to regional security . . .*⁴³

Tokyo's initial efforts to boost defense capabilities are focused on strengthening its intelligence gathering and maritime domain awareness in the East China Sea, bolstering its outer island defense, developing a limited expeditionary and rapid deployment capability, improving its missile defense capability, and expanding its defense industry under the easing of Japan's arms exports ban.⁴⁴

South Korea

North Korea remains South Korea's chief security concern—one the United States, China, and Japan all share to different degrees. However, deteriorating political relations among the Northeast Asian powers pose a major hurdle to region-wide efforts to address North Korean instability and other Northeast Asian security challenges. As its relations with Japan continue to deteriorate, South Korea is nurturing its alliance with the United States while strengthening its relationship with China. In other words, according to the testimony of Jennifer Lind, associate professor of government at Dartmouth College, Seoul is pursuing a hedging strategy between the United States and China.⁴⁵ Indications of Seoul's hedging are evident in the manner in which it handles each of its relationships with the key players in Northeast Asia.

Upholding its alliance with the United States while maintaining some strategic autonomy. During President Obama's April 2014 visit to South Korea, the United States and South Korea highlighted their commitment to the sustainability of their alliance. In addition to concluding a new alliance cost-sharing agreement this year, the two countries have agreed to delay the transfer of wartime operational control* to South Korea from 2015 to a future date. South Korea also announced its intention to procure from the United States the RQ-4 Global Hawk unmanned aerial vehicle system, which would improve Seoul's intelligence, surveillance, and re-

*During the Korean War, the United States took command of allied forces in South Korea under the United Nations Command. Having returned peacetime control of South Korean forces to Seoul in 1994, the United States still maintains the responsibility of wartime operational control of the South Korea forces under a Combined Forces Command. Donald Kirk, "US and South Korea Postpone Transfer of Wartime Control to Seoul," *Christian Science Monitor*, April 25, 2014. <http://www.csmonitor.com/World/Security-Watch/Under-the-Radar/2014/0425/US-and-South-Korea-postpone-transfer-of-wartime-control-to-Seoul>; Robert E. Kelly, "South Korea: Who Should Have Wartime Command?" *Diplomat*, August 12, 2013. <http://thediplomat.com/2013/08/south-korea-who-should-have-wartime-command/?allpages=yes>.

connaissance (ISR) capability, and the F-35 Joint Strike Fighter, which would improve South Korea's air capabilities.⁴⁶

Nevertheless, South Korea preserves some strategic autonomy from the United States, most evident in Seoul's concern regarding the North Korean missile threat. South Korean leaders maintain the U.S.-Japanese vision for missile defense in the region is too expansive for South Korean defense purposes and has elected not to participate in the U.S.-led regional ballistic missile defense architecture.⁴⁷ Instead, South Korea prefers its own capability, known as the Korea Air and Missile Defense (KAMD) system. Following a May 2014 U.S. announcement on the potential deployment to South Korea of a Terminal High Altitude Area Defense (THAAD) system capable of intercepting short-, medium-, and intermediate-range missiles, Seoul expressed cautious support for the system's ability to deter and counter North Korean provocations while reiterating its preference not to join in the U.S.-led regional ballistic missile defense architecture.⁴⁸ Seoul's public statements suggest that even as it expresses quiet approval for elements of enhanced U.S.-Korean defense cooperation, it also seeks to reassure China that improvements in its missile defense are limited in scope and mission. In spite of THAAD's reported radar detection range of at least 621 miles (1,000 km)—or as far as China's major coastal regions—a South Korean defense ministry spokesman stated, "If installed, its primary goal will be to detect ballistic missile launches from North Korea and should not be a big issue for China."⁴⁹

Benefiting from economic integration with China, while hedging against China's growing military influence in the region. Part of South Korean ambivalence about the country's role in the changing Northeast Asian security architecture derives from the strong and mutually beneficial economic ties between China and South Korea. Although South Korea seeks to continue to develop its economic relationship with China, it is unlikely to do so at the expense of its alliance with the United States.⁵⁰ At the same time, South Korea tends to be reluctant to participate in initiatives it may view as part of a U.S.-led security arrangement positioned against China, such as the regional ballistic missile defense system rather than one narrowly focused on North Korea.⁵¹

South Korean military modernization has accelerated in recent years largely in response to increased North Korean provocations;⁵² however, Seoul also seeks to hedge against future Chinese military influence in the region. In testimony to the Commission, Mr. Schoff viewed the 2012 South Korean decision to extend the range of its indigenous ballistic missiles from 186 miles (300 km) to 497 miles (800 km) as an investment toward a capability that could be necessary for a post-unification Korea in a neighborhood of nuclear giants China and Russia, in addition to serving as a capability to counter the ongoing North Korean missile threat.⁵³

Maintaining distance from Japan. According to Dr. Lind, an additional aspect of South Korea's hedging strategy is "the distance it maintains from Japan. Seoul's rejection of closer relations with Tokyo reassures China that [South Korea] is not participating in a balancing effort" against China.⁵⁴ The Japan-South Korea relationship suffers from a difference in security perceptions in North-

east Asia: South Korea prioritizes North Korea while Japan prioritizes China as its chief security concern. A long-running dispute over the Liancourt Rocks (see Figure 1), which South Korea calls Dokdo and Japan calls Takeshima, further fuels mistrust between the two countries. Analysts at the Asan Institute for Policy Studies, a Seoul-based think tank, told the Commission that public opinion polls showed South Koreans view the Liancourt Rocks dispute as the most significant obstacle to healthy Japan-South Korean relations. This sentiment is true even among those respondents with the most favorable attitudes toward Japan.*⁵⁵

Yet another difference that continues to strain their relations involves the historical narrative of Japan's early 20th-century colonial rule of and wartime actions in Korea. President Park stated in a 2013 interview:

*Japan and [South] Korea share many things in common—our shared values of democracy, freedom, and a market economy—and there is a need for us to cooperate on North Korea. . . . But the Japanese have been opening past wounds and have been letting them fester, and this applies not only to Korea but also to other neighboring countries. . . . This arrests our ability to really build momentum, so I hope that Japan reflects upon itself.*⁵⁶

As in China, South Korean officials reacted with outrage at Prime Minister Abe's December 2013 visit to Yasukuni Shrine, which honors nearly 2.5 million Japanese war dead, including 14 war criminals.⁵⁷ In testimony to the Commission, Dr. Lind emphasized that the conflict over historical memory is a symptom, not a cause, of unwillingness in both Seoul and Tokyo to seek reconciliation: "History does not 'get in the way': leaders decide (based on strategic or other interests) whether or not they want to seek reconciliation, and as a result they either put history in the way, or make efforts to remove it as an obstacle."⁵⁸

Outlook for Trilateral Security Cooperation

Japan's ongoing affirmation of its alliance with the United States combined with continued hedging by South Korea ensures the Northeast Asian security architecture likely will remain a "U.S. hub and ally spokes" model rather than an integrated security bloc. Differing security perceptions about China among the United States, Japan, and South Korea suggest the three countries are unlikely to achieve full trilateral security cooperation in the current security environment in the near- to mid-term.

China perceives the U.S.-South Korea alliance as more narrowly focused on the North Korea issue, whereas the U.S.-Japan alliance has the potential to target China and is more wide-ranging and threatening in Beijing's view. Beijing's public statements on the

* Although the Liancourt Rocks are currently South Korea-occupied, the United States does not take a position on the sovereignty of the Liancourt Rocks. The United States has made clear that the Senkaku Islands fall under the U.S.-Japan security treaty, meaning that the United States would defend Japan in the event of an armed attack on the islands; however, it has not taken a position on the applicability of the U.S.-Korea security treaty to the Liancourt Rocks. Demetri Sevastopulo and Simon Mundy, "U.S. Leaves South Korea in Limbo over Contested Dokdo Islands," *Financial Times* (London), February 18, 2014. <http://www.ft.com/intl/cms/s/0/bdaa3820-987b-11e3-a32f-00144feab7de.html#axzz3AIUe1gLD>.

U.S. alliances in Northeast Asia generally invoke the historical context under which the alliances were formed, but in the case of the U.S.-Japan alliance tend to suggest their potential to harm the interest of third parties, such as China.

- Echoing a frequently voiced Chinese concern about U.S. alliances reflecting the harsh security environment of the Cold War era, Chinese Foreign Ministry spokespeople have depicted the U.S.-Japan alliance as “a bilateral arrangement formed under specific historic conditions,” and one that “should not go beyond the bilateral scope and undermine the interests of a third party, including those of China.”⁵⁹
- China’s Foreign Ministry has described the U.S.-Korea alliance as “a bilateral arrangement formed under specific historical circumstances. We hope that the development of relevant bilateral relations could play a constructive role for peace and stability of the Peninsula and the region.”⁶⁰

In the past year, the United States’ expanding and deepening engagement in Northeast Asia has yielded modest gains in the U.S.-Japan-South Korea trilateral relationship. A trilateral summit in March 2014 convened by President Obama yielded a series of defense talks culminating in, among other items, a joint statement affirming the importance of information sharing among the three parties. In a nod to South Korea’s interests, the language focused exclusively on the North Korea issue; Japan, on the other hand, achieved its goal of revisiting the issue of intelligence sharing with South Korea after a breakdown in talks on the issue with Seoul in 2012.⁶¹ Despite the lack of a formal commitment, the statement is an example of the leadership role the United States can play in the Northeast Asian security architecture. However, particularly with regard to South Korea, it is possible in the coming years the United States will seek more support in countering Chinese influence from its allies than they may be willing to extend.⁶²

Shifting Security Dynamics in Southeast Asia and Oceania

Southeast Asia and Oceania comprise a vast and geographically varied region with a diversity of political systems, cultures, and levels of development. The region’s security architecture is more multifaceted than the relatively straightforward hub-and-spoke alliance structure in Northeast Asia. Despite these differences, the region generally shares the same wary view of the unfolding U.S.-China competition for regional power and influence. Singapore’s Minister of Foreign Affairs K. Shanmugam in 2013 described the thinking of many in the region:

The relative weight of China is growing. I’m not one of those who believes the United States is in permanent decline. But nevertheless, the respective levels of influence, there will be a relative shift. And Singapore’s position has consistently been to be good friends of both. . . . Would that be a challenge-free approach? It really depends on how . . . the relationship between the United States and China develops. It could develop in a way that makes it challenging

*for all of us who are friends with both countries and we will just have to adapt to that.*⁶³

As the United States continues to rebalance to Asia, achieving its security goals in the region will require reassurance and reinforcement of its alliances and security associates in addition to continued strong engagement with the Association of Southeast Asian Nations (ASEAN).^{*} ASEAN, the primary multilateral venue to address political issues in the region, has struggled to respond cohesively to China's coercive foreign policy in the region, particularly on the South China Sea disputes. The development of subgroups sharing common interests within ASEAN and the inclusion of interested non-ASEAN parties in these groups, nevertheless offer a reason to be optimistic about the ability of the organization to build regional confidence.

China and Security in Southeast Asia and Australia

China's central objectives with regard to Southeast Asia are to defend its sovereignty claims and preserve its territorial integrity; to secure and ensure access to resources for continued economic development; and to maintain a secure buffer zone around the Chinese mainland. All of these objectives are encompassed in the region's most volatile security issue: the South China Sea disputes among China, Vietnam, the Philippines, Malaysia, Brunei, and Taiwan. For more information on the South China Sea disputes, see Chapter 3, Section 1, "China and the South China Sea," of the Commission's *2012 Annual Report to Congress*, and Chapter 2, Section 3, "China's Maritime Disputes," of the Commission's *2013 Annual Report to Congress*.

Beijing's security relationships with Southeast Asian states are as diverse as the region itself. China maintains strong defense ties with its closest geographic neighbors, Thailand, Cambodia, Laos, and Burma. In maritime Southeast Asia, China has traditionally maintained strong diplomatic and economic influence but weak defense ties. Although maritime Southeast Asian states have become increasingly vocal in their opposition to China's forceful measures to assert its South China Sea claims, Beijing appears undeterred.⁶⁴ For a survey of China's actions since late 2013 to consolidate control over the South China Sea, such as China's deployment of an ultra-deepwater drilling rig to waters disputed with Vietnam from May through July 2014, see Chapter 2, Section 1, "Year in Review: Security and Foreign Affairs."

With Australia, China seeks to maintain strong trade ties while pursuing stronger security relations to at least partially counterbalance the formal and robust U.S.-Australia alliance.⁶⁵ Despite the formalization of a strategic partnership between China and Australia in 2013, the relationship has tempered since then, due in large part to a Chinese perception that Australia has hewed too closely to the United States, and to a lesser extent, Japan.⁶⁶ One example of this dynamic emerged following Australia's criticism of China's East China Sea ADIZ. At a Track 1.5 China-Australia dia-

^{*}U.S. allies in Southeast Asia and Oceania include Australia, the Philippines, and Thailand. U.S. security associates (both established and emerging) include Indonesia, Malaysia, New Zealand, Singapore, Taiwan, and Vietnam.

logue,* one Chinese delegate reportedly referred to the Australian position on the ADIZ as an affront to China's sovereignty and territorial interests, suggesting a likely concern in Beijing of the U.S.-Australia alliance's potential to constrain China in the Asia Pacific.⁶⁷

Southeast Asia and Australia: Security Responses to China

As China pursues its claims in the South China Sea and develops the military capacity to undertake missions farther afield, its increasingly assertive behavior has led Southeast Asian countries and Australia to reconsider their security perceptions.⁶⁸ For example, Vietnam's reaction to China's decision to deploy its oil rig in contested waters was a departure from its usual efforts to maintain friendly ties with China. In addition to publicly condemning Beijing for what it called an "extremely serious violation of Vietnam's territorial sovereignty," Hanoi sought to apply pressure on Beijing through diplomacy and regional forums.⁶⁹ Australia has also taken note of China's growing confidence and expanding operating areas. In early 2014, the PLA Navy's first-ever Indian Ocean combat readiness patrol operated closer to Australia than any previous patrol by the PLA Navy (for more on this deployment, see Chapter 2, Section 1, "Year in Review: Security and Foreign Affairs"). Former Australian intelligence official Rory Medcalf, currently of the Lowy Institute for International Policy, called the exercise "a bit of a wake-up call to [Australian] defense planners to contemplate that in the future they're going to have to expect the Chinese to be able to operate in considerable force in the vicinity of [Australia's] ocean territories."⁷⁰

Because of the growing gap in capabilities between China's PLA and many of the militaries in the region, as well as China's immense economic and cultural influence, "engaging and working with China is more a necessity than a choice," according to Dr. Ratner.⁷¹ Despite the United States' rebalance to Asia policy, Southeast Asian government representatives who met with the Commission this year expressed some uncertainty about the United States' continued security commitments given domestic political and fiscal restraints.⁷² Furthermore, as Walter Lohman, director of the Asian Studies Center at the Heritage Foundation testified to the Commission, most Southeast Asian countries emphasize non-alignment in their foreign policy, such as Indonesia's "a million friends and zero enemies" approach.⁷³ Consequently, Southeast Asian states and Australia are hedging against what they perceive to be strategic uncertainty in the region in the following ways.

Increasing the breadth of security ties by building new relationships. New configurations of intra-Asian security relationships have developed since the late 2000s. These ties tend to derive from the need to balance reliance on China as an economic partner with reliance on the United States as a security guarantor. A desire among many states in the region to participate more actively on the international stage, as well as a need for multilateral solutions

*A Track 1.5 dialogue is an international dialogue between governments that also includes nongovernmental officials, such as leaders in industry, academia, and nongovernmental organizations, and retired senior officials.

to a diversity of transnational threats also drive the proliferation of new defense ties.⁷⁴ Key trends in this growing network of intra-Asian defense ties include:

- Japan is emerging as a key source of support to ASEAN countries on maritime security in the region.⁷⁵ Tokyo offered a \$184 million soft loan to the Philippines to finance its sale of 10 new patrol ships for the Philippine Coast Guard, due to begin arriving in 2015. These ships are expected to patrol Philippine-claimed waters disputed with China. Similarly, Japan has promised to transfer six used patrol vessels and related equipment valued at \$4.9 million to Vietnam in 2015.⁷⁶
- Australia's growing role in the Asia Pacific also is enhancing the burgeoning informal network of regional security ties. In its *Defense White Paper 2013*, Canberra indicated it envisioned expanding its defense engagement beyond its traditional partners in Southeast Asian and Oceania to the larger Indo-Pacific. Under Australian Prime Minister Tony Abbott's government, which came to power in late 2013, Australia is likely to continue deepening security relations across the region, particularly with Japan (discussed in more detail later in this section).⁷⁷
- Cooperative measures among Southeast Asian claimants in the South China Sea dispute is yielding unexpected linkages. The most notable example is the developing defense relationship between the Philippines and Vietnam. In a response to China's aggression in the South China Sea, the two countries have cooperated on measures demonstrating their unity on a peaceful resolution to the South China Sea dispute. Symbolic of this new relationship, in May 2014 Philippines President Benigno Aquino and Vietnam Prime Minister Nguyen Tan Dung announced a "roadmap toward a strategic defense partnership" to deter China in the South China Sea; in June 2014 Philippine and Vietnamese troops held friendly soccer and volleyball matches on a disputed Vietnamese-held island in the Spratly Islands.⁷⁸

Increasing the depth of existing security ties. Even with an increasingly broad array of defense relationships in East Asia and Oceania, the diversity of security interests in the region suggests a formal multilateral security arrangement similar to the North Atlantic Treaty Organization (NATO) is unlikely in the near future.⁷⁹ Instead, existing bilateral security ties—particularly alliances with the United States—have deepened in recent years. In April 2014, the United States and Philippines announced an Enhanced Defense Cooperation Agreement intended to advance the implementation of their defense treaty alliance. During a June 2014 meeting, President Obama and Prime Minister Abbott announced the conclusion of the U.S.-Australian Force Posture Agreement, laying the foundation to expand the U.S. military presence in Australia beyond the existing U.S. Marine rotational force in Darwin. The Obama-Abbott meeting also identified ballistic missile defense in the Asia Pacific as another potential measure of cooperation.⁸⁰

Diversifying and strengthening military and paramilitary capabilities. Many states, facing increasing maritime challenges from China over competing South China Sea claims, have shifted emphasis in defense procurement from ground forces to air and maritime forces. In particular, regional militaries have expressed interest in acquiring capabilities that could boost maritime domain awareness such as patrol craft and maritime surveillance aircraft, and more advanced capabilities for deterrence such as submarines and fighter aircraft.⁸¹ Indonesia, for example, is undergoing a long-term military modernization effort seeking to achieve “minimum essential force” to secure its roughly 17,000-island archipelago by 2024. Then-presidential candidate Joko Widodo stated that Indonesia “rejects solutions [to the South China Sea dispute] through military power”; nevertheless, elected this year on a platform that included a promise to triple the defense and security budget, President Widodo will probably seek to continue a military modernization effort to ensure adequate readiness and capability among Indonesia’s armed forces.⁸² In the absence of high-end military capabilities, one common strategy for Southeast Asian states to defend their maritime claims against China has been to strengthen and re-organize maritime law enforcement fleets. Vietnam renamed its Marine Police force the Vietnam Coast Guard in late 2013, reportedly to make it eligible to obtain patrol boats under the specifications of Japanese aid programs.⁸³

*Emphasizing the role of regional institutions and international law to manage disputes.*⁸⁴ Although ASEAN members originally envisioned a political and economic organization, ASEAN and ASEAN-based forums such as the ASEAN Regional Forum have in recent years served as a vehicle to address security-related issues in the region (for further discussion of the role of ASEAN in regional security, see the following subsection).⁸⁵ ASEAN’s non-binding “Declaration on the Conduct of Parties in the South China Sea” with China was viewed as a success when it was concluded in 2002; progress toward a binding Code of Conduct, however, has since stalled. Facing asymmetry in the balance of military power against China and political deadlock in ASEAN, many Southeast Asian states have emphasized the peaceful settlement of maritime disputes under international law. The Philippines in 2013 filed for legal arbitration over conflicting South China Sea claims with China, which has declined to participate. Following China’s deployment of its oil rig to waters contested by Vietnam, senior Vietnamese leaders publicly stated Vietnam also was prepared to pursue arbitration of maritime claims disputed with China.⁸⁶

The Role of ASEAN in Regional Security

The consensus-based nature of ASEAN, in conjunction with the diverse security interests of its members, has hampered its ability to effectively tackle regional security challenges such as the South China Sea dispute. Although ASEAN has begun to expand its mission set to include security issues, the organization has yet to define the nature of the role it is willing and able to play in regional security.

At the Commission’s March 2014 hearing, witnesses differed on the role of ASEAN in the United States’ security strategy in the

region. Pointing to ASEAN's inability to achieve progress on pressuring China on a South China Sea Code of Conduct, Mr. Lohman felt the United States should advocate "forcefully" for its own interests in the South China Sea rather than depend too heavily on a multilateral organization whose members generally seek to balance security guarantees from both the United States and China. In written testimony to the Commission, he stated, "China's aggressiveness is not sufficiently galvanizing ASEAN against China's challenge. Something needs to be done to change its calculation. This argues for greater American pressure on ASEAN while hedging against its continued failure."⁸⁷ Dr. Ratner took a more sanguine view of ASEAN, advocating for increased U.S. security ties with its allies and security associates in Southeast Asia. In his view, U.S. engagement with ASEAN not only enhances the political sustainability of U.S. military access and presence in the region, but also strengthens the capacity of ASEAN member allies and security associates to support U.S. operations and more independently defend their own interests in the face of Chinese coercion.⁸⁸ Despite differences in outlook on ASEAN's ability to support U.S. security interests, both witnesses agreed on the unlikelihood of the emergence of an ASEAN-centric security architecture given China's diplomatic preference in Southeast Asia to address the region's most pressing issues on a bilateral basis, and the reluctance of ASEAN members to complicate their relationships with China or publicly challenge China.⁸⁹

ASEAN has encountered limited success in resolving the South China Sea dispute with China, but has made progress on nontraditional security issues, particularly under the ASEAN Defense Ministers Meeting Plus (ADMM+) framework established in 2010.* In meetings with the Commission this year, Southeast Asian government representatives consistently supported ADMM+ mechanisms as central pillars of the regional security architecture. Although China's membership in the ADMM+ and other ASEAN-offshoot organizations limits the ability of these organizations to maneuver beyond China's preferences, these organizations will continue to be valuable for the purposes of confidence building in the region. Sole reliance on these organizations, however, is unlikely to be enough to ensure peaceful resolution of the South China Sea dispute in the interest of all claimants.⁹⁰

The Role of the U.S.-Australian Alliance in Regional Security

Formed in the aftermath of World War II, the U.S.-Australian alliance continues to be highly valued among the Australian public and policymakers today.⁹¹ The alliance commits the United States and Australia to "act to meet the common danger" in the event of an "armed attack in the Pacific Area on any of the Parties."⁹²

*The ADMM+ includes defense ministers from the ten ASEAN member states and eight "Plus" countries including the United States and China. At its inaugural meeting, the ADMM+ agreed on five areas of practical cooperation: maritime security, counter-terrorism, humanitarian assistance and disaster management, peacekeeping operations, and military management. ASEAN Defense Ministers' Meeting, "About the ASEAN Defense Ministers' Meeting (ADMM-Plus)," March 28, 2014. <https://admm.asean.org/index.php/about-admm/about-admm-plus.html>.

China-Australia Economic Relations

China's rise in Asia has generated debate in Australia about how to manage the tension between its economic relationship with China, Australia's largest trading partner, and its security relationship with the United States, Australia's ally.⁹³

China is Australia's biggest trading partner, primarily due to China's strong demand for Australian commodities. In 2013, 36 percent of Australia's goods exports (\$88.5 billion) went to China, nearly a 30 percent increase in exports to China year-on-year. Over 80 percent of Australian exports to China in 2013 were ores and minerals including iron, coal, and gold.⁹⁴ China's share of Australian resource exports grew from 8 percent in 2002–2003 to 52 percent in 2012–2013.⁹⁵ China is also the biggest market for Australian agricultural products (including meat and dairy), accounting for 20 percent of all agricultural exports in 2013.

Chinese foreign direct investment (FDI) in Australia, though small, has been growing steadily. In 2013, Chinese FDI in Australia was \$9 billion, down 10 percent from 2012. As with trade, China's FDI is concentrated primarily in the mining sector: Since 2006, roughly 75 percent of Chinese FDI has been in mining and natural gas deals.⁹⁶ There is also significant interest by Chinese investors in Australian real estate, with \$1.2 billion worth of FDI in commercial real estate in 2013 (Credit Suisse estimates that Chinese buyers account for 18 percent of all new property purchases in Sydney).⁹⁷

During the Commission's trip to Australia, Australian business leaders told Commissioners China's demand for Australian commodities was fundamental to Australia's ability to weather the global financial crisis (indeed, on the strength of its exports, Australia has been running substantial trade surpluses with China). However, Australia's overreliance on commodities trade has resulted in a skewed economic development where the resources sector has grown, but other sectors lag.* Moreover, the recent economic slowdown in China, coupled with the global decline in commodity prices, has exposed the vulnerabilities of Australian overdependence on China's demand.⁹⁸

In his meeting with the Commission, Mr. White, the Australian National University professor, opined Australia should support an Asian security architecture accommodating both China and the United States, in order to avoid the dilemma of choosing between the two or stoking a heated strategic rivalry.⁹⁹ This strategy has not widely taken root among Canberra's policymakers. Instead, the Australian government has emphasized its firm alliance commitment to the United States in clear terms. At his meeting with President Obama in June 2014, Prime Minister Abbott stated, "I want to assure the President that Australia will be an utterly de-

* Between 2003 and 2012, companies invested almost A\$400 billion (\$415 billion) on projects; during the same period, mining's share of Australia's national output doubled. Jamie Smyth, "Australia's Luck Runs Low as Chinese Economy Cools," *Financial Times*, September 23, 2014. <http://www.ft.com/intl/cms/s/0/6412e84e-42e8-11e4-9a58-00144feabdc0.html?siteedition=intl#axzz3EAdZbuJ3>.

pendable ally of the United States.”¹⁰⁰ Commission interlocutors at U.S. Embassy Canberra, U.S. Consulate Sydney, and the Australian Department of Defense, similarly emphasized Canberra’s ongoing dedication to the alliance.

Unlike in Northeast Asia, where political friction limits security cooperation between U.S. allies, Australia’s burgeoning security relationship with Japan hints at the potential for two U.S. allies to reshape the Asian security architecture in a manner favorable to U.S. interests. Prime Minister Abe’s remarks to the Australian Parliament in July 2014 referenced the shared values and common U.S. ally between Japan and Australia. He also reinforced the notion that aligned security interests can overcome lingering wartime tensions: “. . . Japan and Australia will finally use our relationship of trust, which has stood up through the trials of history, in our cooperation in the area of security.”¹⁰¹

Key Acquisitions for the Australian Defense Force

Australia’s anticipated military acquisitions from the United States, in addition to strengthening confidence in the U.S.-Australia alliance, will boost Australian interoperability with U.S. forces for potential missions in the Asia Pacific. Australia intends to acquire at least 72 F-35 Joint Strike Fighters, the first of which debuted to great fanfare in July 2014.¹⁰² Additionally, Australia plans to purchase both the U.S. P-8 Poseidon, a Boeing 737-derivative designed for antisubmarine warfare and antisurface warfare, and the U.S. MQ-4C Triton unmanned maritime surveillance aircraft, capable of missions of over 24 hours covering an area of over 1 million square nautical miles. The complementary capabilities of these aircraft would provide Australia with an improved ability and range for maritime patrol and ISR.¹⁰³

Perhaps the Australian Defense Department’s most challenging task at present is replacing its fleet of six COLLINS-class diesel electric submarines (SS), which will begin to reach the end of their service lives in the late 2020s, with a new platform with improved stealth and significant range and endurance. European firms have for some time been the strongest contenders to replace the COLLINS SS.¹⁰⁴ In large part due to the growing relationship between Australia and Japan and changes in Japanese arms export policy in 2014, Canberra also has begun to seriously consider Japan’s SORYU-class diesel electric submarine as a candidate platform.¹⁰⁵ As this Report went to print, media reports indicated the strong possibility of an Australia contract for the Japanese SORYU-class design.¹⁰⁶ Having only recently eased its arms export ban, Japan would need to seriously consider the impact of such a sale on its pacifist identity. On the Australian side, engineering and technical requirements would need to be closely scrutinized—particularly after a trying experience with the beleaguered COLLINS program—to ensure the new platform meets Australia’s programmatic and budgetary needs.¹⁰⁷

Implications for the United States

As China continues to pursue its national interests aggressively, U.S. allies and security associates will continue to seek reassurance about the breadth, depth, and limits of the United States' security guarantees. The credibility of U.S. alliances in the region is therefore central to their deterrent value against China. Across the region, U.S. allies and security associates are seeking greater certainty and specificity from Washington on the costs it is willing to impose on China for its ongoing attempts to subordinate international norms to its own narrow interests in the region and use of coercive measures to assert its claimed sovereignty and even secure territorial gains in disputed areas.¹⁰⁸

At the same time, a perception by U.S. allies of a "blank check," or unconditional and open-ended security commitment from the United States, could embolden allies to engage in risky or provocative actions. Dr. Lind emphasized in her testimony to the Commission this risk can be managed if parties can agree on genuine shared interests within the alliance. The alternative could be a confrontation with China over issues in which the United States has minimal strategic interest.¹⁰⁹

Over the next several years, the sustainability of the United States' security partnerships in Asia will be complicated by emerging security challenges outside of Asia. This will require not only reinforcing the "rebalance" policy with additional U.S. forces, but also increased inputs and resources from U.S. allies and partners in the region. In a speech in May 2014, Admiral James "Sandy" Winnefeld, USN, vice chairman of the Joint Chiefs of Staff, stated, "it's likely we'll come to rely more on [our] partners to resource the means for their defense, as we work closely together on the ways."¹¹⁰ As the United States finds itself asking more of its allies, continued communication on what constitutes shared security interests is critical to the success of the alliance.

The long-term benefits of strong U.S. alliances and security partnerships in the region far outweigh the risks those relationships pose to the United States. U.S. support for enhanced military and law enforcement capabilities for its friends and allies, such as the transfer of decommissioned U.S. Coast Guard cutters to the Philippine Navy, serve both to strengthen deterrent capabilities in the region and to enhance possibilities for interoperability with the U.S. armed forces. Expanding the forward-deployed U.S. military presence in allied host nations serves not only as a tangible commitment to the alliance but also improves the United States' ability to shape the strategic environment, respond to contingencies, and deter conflicts. Finally, increased U.S. support for ISR capabilities of its friends with whom it shares intelligence in the region, such as the sale of Global Hawk unmanned aerial vehicles to Korea, contributes to improved situational awareness for the United States as well.

China's assertive behavior in East Asia is taking place in the context of what it views as a "period of strategic opportunity" through 2020 and a favorable external security environment in which it can focus on economic development.¹¹¹ This suggests that if and when China achieves its domestic development goals, China

may pursue an even more assertive foreign policy. In this scenario, Beijing likely would be less concerned about damaging U.S.-China relations over policy differences and more willing to impose costs on other regional powers that challenge China's core interests. China also might try to obstruct more directly those policies it perceives undermine China's regime survival, economic and social welfare, and sovereignty. If this is the case, the United States also faces a critical window over the next five years to lay the groundwork for its long-term security interests in the Asia Pacific.

Conclusions

- Beijing has concluded the U.S.-led East Asia security architecture does not benefit its core interests of regime preservation, economic and social development, and territorial integrity. In 2014, China's leaders began to promote a vision of regional security that marginalizes the United States and "relies on the people in Asia to run Asia's affairs, deal with Asia's problems, and uphold Asia's security"—a vision at odds with the present security architecture encompassing a strong network of U.S. alliances and partnerships in East Asia.
- China is engaged in a sustained and substantial military buildup that is shifting the balance of power in the region, and is using its growing military advantages to support its drive for a dominant sphere of influence in East Asia.
- China employs economic incentives and punishments toward its neighbors to support its diplomatic and security goals in East Asia to extract political or security concessions from its Asian neighbors. The market dependencies of many East Asian countries on China—the result of China's deep integration into regional manufacturing supply chains—afford it leverage in pursuing regional security interests.
- China's security relations with Japan are deteriorating over the Senkaku Islands dispute and grievances over Japan's wartime past. Conversely, China's security relations with South Korea are warming as Beijing seeks continued cooperation with Seoul on North Korea. The two Northeast Asian powers differ in their responses to China's assertive security policy in the region: Japan is balancing against China by boosting its own defensive capabilities and its alliance with the United States, while South Korea appears to be pursuing a hedging strategy by maintaining security relations with both the United States and China.
- The current regional security arrangement in Northeast Asia, for which the U.S. alliances with Japan and South Korea provide a basis, will probably remain unchanged in the near term. Differences in security priorities between Japan and South Korea means that without greater political will to overcome these differences, full-fledged trilateral security cooperation among Japan, South Korea, and the United States is unlikely to materialize in the near- to mid-term.

- China's increasingly assertive actions in the South China Sea have led Southeast Asia and Australia to build new defense relationships, deepen existing defense relationships, strengthen military and paramilitary capabilities, and emphasize the role of regional institutions and international law to manage disputes.
- As the United States seeks to reaffirm its alliance with Australia as part of the U.S. rebalance to Asia, China is seeking stronger security ties with Australia to serve as a counterweight to the alliance. Australia's challenge is to ensure its own economic and security interests in the midst of the ongoing Pacific power shift. Similarly, continued U.S. engagement with ASEAN ensures the political sustainability of U.S. security policy in East Asia, but carries the risk of relying too heavily upon an organization which has yet to define its role in East Asian security.

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SECTION 2: RECENT DEVELOPMENTS IN CHINA'S RELATIONSHIP WITH NORTH KOREA

Introduction

This section examines China's relationship with North Korea and assesses how China's approach to relations with North Korea is shifting in light of Pyongyang's continued destabilizing behavior. It concludes with a discussion of how the evolving China-North Korea relationship impacts the United States.* The statements and assessments presented here are based on the Commission's June 2014 hearing on China-North Korea relations, briefings by government and nongovernmental experts on China-North Korea relations, the Commission's fact-finding trip to South Korea, and open-source research and analysis.

Overview of China-North Korea Relations

China and North Korea fought alongside each other in the Korean War and have shared a Treaty of Friendship, Co-operation and Mutual Assistance since 1961.† Each is the other's only treaty ally, and their relationship is founded on wartime camaraderie, decades of communist party ties, proximity, and a shared resentment of the West, among other factors. Mao Zedong famously said that China and North Korea are "closer than lips and teeth," and both countries for decades have perpetuated that image.

*For a more comprehensive examination of China-North Korea relations, see U.S.-China Economic and Security Review Commission, *2013 Annual Report to Congress*, November 2013, pp. 228–229; and U.S.-China Economic and Security Review Commission, *2011 Annual Report to Congress*, November 2011, pp. 241–252.

†Among other assurances, the treaty provides that "the Contracting Parties undertake jointly to adopt all measures to prevent aggression against either of the Contracting Parties by any state. In the event of one of the Contracting Parties being subjected to the armed attack by any state or several states jointly and thus being involved in a state of war, the other Contracting Party shall immediately render military and other assistance by all means at its disposal." Treaty of Friendship, Co-operation and Mutual Assistance between the People's Republic of China and the Democratic People's Republic of Korea, July 11, 1961.

Figure 1: Korean Peninsula Map

Source: Ian McGibbon, 'Asian Conflicts-Korean War,' Te Ara—The Encyclopedia of New Zealand, updated 16-Nov-12. <http://TeAra.govt.nz/en/map/34516/korean-peninsula-showing-the-38th-parallel>.

China's support for North Korea is multifaceted. On the economic front, China provides vital food and energy aid to North Korea, promotes investment, and funds and develops joint special economic zones. China generally seeks to use this economic engagement as a way to enhance stability in North Korea.¹ On the diplomatic front, China uses its position on the United Nations (UN) Security Council to shield North Korea from international condemnation and to blunt the impact of sanctions.² In addition, China has sold military and dual-use materials associated with ballistic missiles to North Korea, though it is unclear whether this support continues today.* China has provided jet fuel and small arms to North Korea as well.³ China's failure to fully enforce UN sanctions on North

*Most recently, in 2012, North Korea displayed transport-erector-launchers for its new KN-08 ballistic missile affixed to vehicles imported from China. The Chinese government claimed the vehicles were lumber transporters exported to North Korea in 2011 for agricultural use and stated the sale did not violate sanctions or Chinese law. The U.S. Department of State also understands the sale to be of a civilian, not military, nature. However, the UN Panel of Experts tasked with investigating sanctions enforcement against North Korea noted in a 2013 report that "the particulars of the transaction remain unclear and the Panel will continue its investigations." United Nations Security Council, *Report of the Panel of Experts Established Pursuant to Resolution 1874 (2009)*, June 11, 2013, p. 27. http://www.un.org/iga/search/view_doc.asp?symbol=S/2013/337; Associated Press, "China Denies Exporting North Korean Missile Launch Vehicles," June 13, 2012. <http://www.theguardian.com/world/2012/jun/13/china-north-korea-missile-vehicles>. Some analysts remain skeptical of China's claim that the vehicles were truly intended for civilian use. For example, see Mark Hibbs, "China and the POE DPRK Report," *Arms Control Wonk* (Blog), July 2, 2012. <http://hibbs.armscontrolwonk.com/archive/879/china-and-the-poe-dprk-report>; and Jeffrey Lewis, "That Ain't My Truck: Where North Korea Assembled Its Chinese Transporter-Erector-Launchers," 38 North, February 3, 2014. <http://38north.org/2014/02/jlewis020314/>.

Korea has also enabled the North's military modernization, including its ballistic missile programs.⁴

China's support for North Korea belies the true nature of Sino-North Korean relations, which can be described as a "mutual hostage" situation in which North Korea depends on Chinese economic, political, and security assistance for regime survival and China depends on North Korea to provide a strategic buffer between itself and U.S.-allied South Korea.⁵ This mutual dependence causes resentment on both sides. North Korea resents its near-total dependence on China, and perceives Beijing as high-handed and condescending.⁶ It also distrusts China, which it feels has abandoned its Marxist-Leninist principles and has become politically and morally corrupted by capitalism and its relations with South Korea and the United States.⁷ For its part, Beijing resents Pyongyang's continued provocations, which it fears will destabilize and raise the risk of conflict in the region; drive South Korea and the United States to strengthen their alliance and military capabilities, which also could be used to threaten China; and prompt the international community to criticize China for its role as Pyongyang's primary supporter.⁸

The following pages chronicle the deterioration of Sino-North Korean ties in recent years, but conclude that in spite of the growing risks North Korea poses to China's interests, China still supports—and likely will continue to support—its neighbor. China's anxiety over the United States is the primary driver of this seemingly counterintuitive policy. Beijing sees U.S. military power on the Korean Peninsula as a threat to its security environment and, as such, relies on and seeks to bolster the North Korean buffer to ensure U.S. troops remain below the 38th parallel.

China-North Korea Relations Deteriorate

According to several subject matter experts consulted by the Commission during its hearing and trip to Seoul, South Korea, Sino-North Korean relations have become increasingly tense since late 2012. High levels of distrust and frustration now characterize the relationship, particularly on the Chinese side.⁹

North Korea Tests Long-Range Missile Capability and Conducts its Third Nuclear Test

Sino-North Korean ties began to deteriorate after North Korea's December 2012 rocket launch, which put the country's first satellite into orbit. Although Pyongyang insisted the launch was part of a peaceful civilian space program, the international community viewed it as a thinly-veiled attempt to test the North's long-range ballistic missile capability, and the UN Security Council condemned the launch as a violation of resolutions prohibiting North Korea from using ballistic missile technology in space launches.¹⁰ A few months later, in February 2013, North Korea conducted its third nuclear test, also in violation of UN resolutions.¹¹ Much to China's frustration, both the rocket launch and the nuclear test took place during China's sensitive leadership transition and de-

spite Beijing's repeated warnings to Pyongyang against such provocations.*¹²

Beijing's diplomatic response to North Korea's 2013 nuclear test was swift but limited, as it stopped short of taking serious economic and political actions against Pyongyang. China issued several strongly worded statements opposing the nuclear test, summoned North Korea's ambassador to China, and cooperated with the United States and other UN Security Council members to craft and pass Security Council Resolution 2094, which "strengthen[s] and expand[s] the scope of United Nations sanctions against [North Korea] by targeting the illicit activities of diplomatic personnel, transfers of bulk cash, and the country's banking relationships, in response to that country's third nuclear test."¹³ Although China took some steps to enforce the new sanctions (see below), China's efforts in crafting and passing Resolution 2094 likely were meant more to send a signal of disapproval to Pyongyang than be a punitive measure.¹⁴

Kim Jong-un Purges and Executes Jang Song-taek

In December 2013, relations soured further when North Korean leader Kim Jong-un purged and executed Jang Song-taek, his uncle and then second-most powerful official in North Korea. According to North Korean official media, Mr. Jang's crimes included selling "precious underground resources at random" and "committing such an act of treachery . . . as selling off the land of the Rason economic and trade zone to a foreign country."¹⁵ These allegations were barely-veiled references to Mr. Jang's dealings with China, which imports North Korean resources and shares the Rason special economic zone with North Korea.

Beijing was stunned and upset by Mr. Jang's execution, according to several subject matter experts and U.S. and South Korean government officials consulted by the Commission.¹⁶ Mr. Jang had been Beijing's main interlocutor in Pyongyang and was known for his role in promoting bilateral economic projects. Sue Mi Terry, senior research scholar at the Weatherhead East Asian Institute at Columbia University, testified to the Commission that Mr. Jang "was a man that Chinese leaders had gotten used to dealing with."¹⁷ Chinese officials sought to quickly reestablish normalcy in the relationship following Mr. Jang's execution, according to Daniel Pinkston, deputy project director for Northeast Asia at the International Crisis Group, who met with the Commission in Seoul.†

*Among North Korea's other destabilizing actions in 2013 were its decision to temporarily shut down the Kaesong Industrial Complex, an industrial zone in the North shared and jointly managed by North Korea and South Korea, and its frequent and belligerent official statements threatening the United States and South Korea. *Fire on the City Gate: Why China Keeps North Korea Close* (International Crisis Group, December 9, 2013), pp. 3-4. <http://www.crisisgroup.org/~media/Files/asia/north-east-asia/254-fire-on-the-city-gate-why-china-keeps-north-korea-close.pdf>.

† In recent years, Beijing increasingly has sought to conduct its relationship with North Korea through official diplomatic channels, a departure from a long history of relations conducted primarily via party-to-party ties. China's loss of its connection to the North via Mr. Jang probably reinforced to China's top policymakers the need for more institutionalized and formal state-to-state ties. U.S.-China Economic and Security Review Commission, *Hearing on Recent Developments in China's Relations with Taiwan and North Korea*, written testimony of Stephanie Kleine-Ahlbrandt, June 5, 2014; Yonhap News Agency, "(LEAD) China's Relations with North Korea Have Normalized: U.S. Expert," May 22, 2014. <http://english.yonhapnews.co.kr/northkorea/2014/05/22/93/0401000000AEN20140522006100315F.html>.

North Korea Conducts Missile Tests

A review of open-source reporting suggests North Korea fired more than 100 projectiles over the course of at least 18 missile tests in 2014.¹⁸ According to the South Korean Ministry of National Defense, at least ten of these tests used ballistic missile technology,¹⁹ violating UN resolutions against the use of ballistic missile technology in North Korean launches. The UN Security Council—which includes China—condemned two of the launches.²⁰ The Chinese government responded to each of the missile tests with the same basic formulation, along the lines of: “We hope all parties make efforts to reduce tension and safeguard peace and stability on the Korean Peninsula.”²¹

North Korea carried out some of these tests without prior warning, contravening international norms for safety of navigation. In one instance, the South Korean government reported that four tactical ballistic missiles test-fired by North Korea in March passed above airspace traversed by a China Southern Airlines passenger aircraft seven minutes later.²² Regarding this incident, a Chinese Ministry of Foreign Affairs spokesperson stated, “Countries, while conducting military trainings or exercises, should adopt necessary measures in accordance with international conventions to ensure the safety of civil aircrafts and vessels in relevant airspaces and waters.”*²³

China Strengthens Ties with South Korea

The warming of ties between China and South Korea since mid-2013 is both an indication of and a response to deteriorating Sino-North Korean relations.† Beijing’s public and high-profile efforts to advance relations with Seoul suggest Chinese leaders are becoming increasingly unhappy with China’s relationship with North Korea and wish to communicate as much to Pyongyang, Seoul, and the world.

Relations between Beijing and Seoul have significantly improved since South Korean President Park Geun-hye traveled to China for a state visit in June 2013. Her visit culminated in an ambitious joint statement announcing several initiatives to strengthen bilateral security and economic cooperation, including a high-level hot-

*The United States and several other countries in July 2014 issued a letter to the International Civil Aviation Organization, a UN body that develops standards and recommended practices for international civil aviation, expressing concern that North Korea’s failure to issue prior notification of its missile launches poses a “serious threat” to international aviation safety. North Korea in the past notified the International Civil Aviation Organization of some launches. Agence France-Presse, “U.S. Warns of Aviation Risk from N. Korea Rockets,” July 16, 2014. <http://news.yahoo.com/us-warns-aviation-risk-n-korea-rockets-210129436.html>.

† Warming Sino-South Korean relations are not merely a reflection of the Sino-North Korean relationship. China’s more friendly approach to relations with South Korea also is motivated by China’s desire to alienate Japan, with which it is embroiled in a contentious territorial dispute. Policy experts who met with the Commission at the Asan Institute for Policy Studies in Seoul assessed that Beijing seeks to take advantage of an ongoing rift in the Japan-South Korea relationship to drive a wedge between Seoul and Tokyo. For example, Beijing implored Seoul to join it in criticizing Tokyo in 2013 when several high-level Japanese officials visited the Yasukuni Shrine, a site controversial for its commemoration of several war criminals implicated in wartime atrocities against Chinese and South Koreans. For an in-depth discussion of the China-South Korea-Japan triangular relationship, see Chapter 3, Section 1, “China and Asia’s Evolving Security Architecture.” See also Andrew Browne, “South Korea-Japan Rift on Exhibit in China,” *Wall Street Journal*, March 5, 2014. <http://online.wsj.com/news/articles/SB10001424052702304815004579418653837738902>; and Robert E. Kelly, “The Complex China-South Korea Relationship,” *Diplomat*, June 18, 2014. <http://thediplomat.com/2014/06/the-complex-china-south-korea-relationship/>.

line between South Korea's chief of national security and China's state councilor for foreign affairs, and a semiannual bilateral strategic dialogue between the two countries' vice foreign ministers.²⁴ The visit also laid the groundwork for several follow-up meetings between officials from both countries.²⁵

From July 3–4, 2014, Chinese President Xi Jinping reciprocated President Park's 2013 visit with a trip to Seoul, marking the first time a sitting Chinese president had ever visited South Korea before North Korea. The joint statement from the visit declared, "The two countries reaffirm their firm opposition to the development of nuclear weapons on the Korean Peninsula." President Park stated she and President Xi agreed that "denuclearization of North Korea must be achieved at all costs."²⁶ Pyongyang expressed its displeasure with President Xi's trip to Seoul by conducting several missile tests in the weeks leading up to the visit,²⁷ and North Korea's National Defense Commission asserted, "Some backbone-lacking countries are blindly following the stinky bottom of the U.S., also struggling to embrace Park Geun-hye."²⁸ The "backbone-lacking country" referenced almost certainly is China.

North Korea has been and remains a central focus of the China-South Korea relationship. North Korea likely was a prominent issue on the agenda for the July 2014 summit meeting between Presidents Xi and Park,²⁹ and U.S. officials told the Commission that a telephone call between Presidents Xi and Park in the run-up to the summit featured coordination on denuclearizing North Korea. Official communication about North Korea is supplemented by informal engagements and dialogues. For example, U.S. government officials in Seoul told the Commission that former Chinese People's Liberation Army leaders and retired Chinese government officials are increasingly willing and able to meet with their South Korean counterparts to discuss North Korea.

Assuming China-South Korea relations continue to warm, China's influence and leverage over South Korea will grow. According to South Korean government officials with whom the Commission met in Seoul, Beijing seeks to use this leverage to pressure Seoul to abandon its alliance with the United States. Andrei Lankov, associate professor of social science at Kookmin University in Seoul and an expert on Sino-North Korean relations, told the Commission that Beijing thinks time is on its side and expects its influence over Seoul (and Pyongyang) will grow in the future, which will better position China to affect outcomes on the Peninsula. He noted it is highly likely that China intends to use its growing influence over Seoul to apply pressure on the U.S.-South Korea alliance in order to negotiate a diminished U.S. presence on the Peninsula.

High-Level Contacts between China and North Korea Decrease

In stark contrast to the China-South Korea bilateral relationship, high-level contacts between China and North Korea in 2014 have been conspicuously limited.³⁰ According to open-source reporting, only seven high-level exchanges have occurred between the two countries since 2013, compared to 30 such meetings during the pre-

vious two years.*³¹ Moreover, President Xi has not met with Kim Jong-un. By comparison, he has met with President Park five times since 2013.³²

North Korea Reaches Out to Russia and Others

Just as China has strengthened ties with South Korea, North Korea has been reaching out to other countries, suggesting it too is dissatisfied with its relationship with China.

In 2013 and 2014, North Korea bolstered economic ties with Russia in particular:

- In September 2013, state-owned Russian Railways and the North Korean Ministry of Railways completed repairs on North Korea's Rajin Port and on a railroad from Siberia to the port. In early 2014, Russia began using the reopened port as a transshipment hub for coal exports destined for China.³³
- In April 2014, the Russian parliament agreed to forgive 90 percent (close to \$10 billion) of North Korea's debt to Russia.³⁴
- During a high-level Russian delegation to Pyongyang in April 2014, the two countries signed an agreement on bilateral trade and economic cooperation and Russia donated an unspecified number of fire engines to North Korea.³⁵
- In June 2014, North Korea reportedly announced plans to simplify visa requirements and provide Internet access and mobile services for Russian investors and businesspeople working in North Korea.³⁶
- In June 2014, Russian officials appeared to revive a long-standing and ambitious plan to extend the Trans-Siberian Railroad through both North and South Korea.[†]
- North Korea in 2014 imported greater amounts of Russian crude oil than in previous years, and according to open-source research conducted by NK News, North Korean oil tankers in 2014 visited Russian ports more often than Chinese ports.³⁷

This current upswing in Russia-North Korea relations reflects Pyongyang's decades-long practice of playing its two patrons, China and Russia, against one another to extract political and economic gains and to mitigate the effects of international isolation.³⁸ The success of this strategy is succinctly illustrated in remarks made by Russian President Vladimir Putin in 2003 about the prospective Trans-Siberian Railroad extension through the Korean Peninsula:

*For the purposes of this Report, meetings held at the vice-ministerial level or higher are considered high-level meetings.

†With the exception of brief cross-border rail service between 2007 and 2009, North and South Korean efforts to establish a trans-Korean rail link have been stymied for several decades, mostly due to political sensitivities and security issues. Discussions of linking a trans-Korean railway with the Trans-Siberian Railroad have been ongoing since the late 1990s. *Russia Times*, "Russia to Extend Trans-Eurasian Rail Project to Korea," June 6, 2014. <http://rt.com/business/164116-russia-railway-north-korea/>; Andrei Lankov, "A Trans-Korean/Trans-Siberian Railway? Not Any Time Soon," NK News, November 18, 2013. <http://www.nknews.org/2013/11/a-trans-korean-trans-siberian-railway-not-any-time-soon/>; and *North Korea-Russia Relations: A Strained Friendship* (International Crisis Group, December 4, 2007), p. 12. http://www.crisisgroup.org/-/media/Files/asia/north-east-asia/north-korea/b71_north_korea_russia_relations_a_strained_friendship.pdf.

“Russia must build the [railroad] for the simple reason that if it does not, then our dear friend China will do it.”³⁹

In what appears to be another attempt to lessen its economic isolation, North Korea in early 2014 took steps to improve ties with Japan as well. In May, Pyongyang agreed to re-open stalled investigations into North Korea’s kidnapping of several Japanese citizens in the 1970s and 1980s in exchange for Japan lifting some of its unilateral economic sanctions on North Korea.*⁴⁰ Japan began to lift sanctions in July, but by mid-September North Korea appeared to be delaying progress on the investigation. Japanese Chief Cabinet Secretary Yoshihide Suga announced that Pyongyang’s initial report on the investigation, expected in the fall of 2014, could be delayed up to one year, predicting that negotiations with North Korea “will not go smoothly.”⁴¹ Even if Pyongyang makes progress on the abduction investigations, Japan is unlikely to pursue a more friendly relationship with North Korea. Japan, which does not have official diplomatic relations with North Korea, views the North as a major security threat, which it works in concert with its ally the United States and South Korea to address.† Indeed, North Korea is a central focus of the U.S.-Japan alliance and a driver of Japan’s ongoing security reforms.⁴²

North Korea’s Foreign Minister Ri Su-yong traveled to Southeast Asia in August, where he attended the high-profile Association of Southeast Asian Nations Regional Forum. A South Korean official referred to the trip as “a move to come out of international isolation and gather ground in the global diplomatic arena.”⁴³

These efforts reflect North Korea’s desire to reduce its overwhelming dependence on China and suggest the Kim regime has determined it should hedge against the potential that China will abandon its long-standing North Korea policy. Stephanie Kleine-Ahlbrandt, director of Asia-Pacific Programs at the United States Institute of Peace, testified to the Commission, “There’s nothing more the North Koreans would like [than] to do a great deal with Japan, a sunshine deal‡ with South Korea, get in touch with Myanmar, Indonesia, and any other country that will deal with them.”⁴⁴

China’s Perceptions and Policies Evolve, Strategy Remains the Same

Although North Korea’s recent provocations are leading to a shift in China’s perception of North Korea and an adjustment of policy

* Sanctions lifted by Japan include (1) some restrictions on the flow of people between Japan and North Korea; (2) reporting requirements for some currency transfers from Japan to North Korea; and (3) an embargo on some North Korean ships docking in Japanese ports. *Asahi Shimbun*, “Japan to Lift 3 Sanctions Against North Korea; Abduction Reinvestigation to Start,” July 3, 2014. http://ajw.asahi.com/article/behind_news/politics/AJ201407030071; Linda Sieg and Kiyoshi Takenaka, “Japan Lifts Some North Korean Sanctions amid Report of Surviving Abductees,” Reuters, July 3, 2014. <http://www.reuters.com/article/2014/07/03/us-japan-northkorea-idUSKBN0F70NK20140703>.

† Japan and South Korea cooperate on security issues related to the North, especially in the context of the U.S.-Japan-South Korea relationship. However, bilateral cooperation between the two countries has recently suffered from political tensions between Tokyo and Seoul, according to U.S. officials in Seoul and policy experts who met with the Commission at the Asan Institute for Policy Studies. For a more comprehensive discussion of tensions between Japan and South Korea, see Chapter 3, Section 1, “China and Asia’s Evolving Security Architecture.”

‡ This is a reference to South Korea’s “sunshine policy” toward North Korea, which lasted from the late 1990s to the mid-2000s and was intended to build positive ties with the North.

toward North Korea, China's overarching strategy and objectives have not changed. China continues to prioritize reinforcing stability in North Korea with the aim of maintaining a credible buffer between itself and the U.S.-allied South.

A Vibrant Debate on North Korea Emerges

Beijing has allowed a vibrant public debate on the utility and wisdom of China's policies toward North Korea to emerge since North Korea's third nuclear test in 2013.*⁴⁵ The spectrum of views ranges from proponents of China's current policy of supporting the Kim regime, to those calling for Beijing to pressure Pyongyang to moderate its destabilizing behavior,[†] to the "abandonment school" of strategists and commentators who argue North Korea is a liability for China and that Beijing should "cut its losses and cut North Korea loose."⁴⁶ Dr. Lankov characterizes the debate:

We should keep in mind that North Korean studies remain a rather divided area in China. There are some specialists in China who are genuine supporters of North Korea's cause. Some of these people belong to an older generation of specialists who once studied the North as students, while some others merely see North Korea as a useful strategic buffer against the bullying United States. There are also experts who see North Korea as a troublesome anachronism, a fossil from a Maoist-Leninist past that most Chinese wish to forget about. However, even such people, often with close connection to South Korea, still tend to appreciate the strategic advantages presented by North Korea to China.⁴⁷

So far, the "abandonment school" of thought appears to be a minority view and has not gained traction among China's senior leaders. However, the ongoing debate reveals a demographic trend that may have implications for China's policy toward the North in the future. Ms. Kleine-Ahlbrandt's testimony to the Commission echoes Dr. Lankov's observation that Chinese public opinion on North Korea is subject to a generational divide, and asserts that younger Chinese "overwhelmingly view [North Korea] with pity and contempt."⁴⁸ It may be the case that future generations of Chinese leaders—those who have no memory of the Sino-North Korean camaraderie of the 1950s and who prefer China shed its reputation as North Korea's only patron—will calculate it is no longer in China's interests to support the North unconditionally.

* Similar debates emerged in China following North Korea's first and second nuclear tests in 2006 and 2009. U.S.-China Economic and Security Review Commission, *Hearing on Recent Developments in China's Relations with Taiwan and North Korea*, written testimony of Stephanie Kleine-Ahlbrandt, June 5, 2014.

[†] Chinese state-affiliated newspaper *Global Times* published an editorial by a prominent Chinese expert on North Korea which stated that North Korean missile launches "have already posed a grave threat to the security of neighboring countries," and opined that China should "impose a certain amount of pressure" on North Korea. Although commentaries such as this do not necessarily represent the views of the Chinese government, they suggest frustration over North Korea's behavior is on the rise in China. Zhang Liangui, "Pyongyang Missile Launch Risks Isolation," *Global Times*, May 18, 2014. <http://www.globaltimes.cn/content/849325.shtml>.

China Begins to Take Denuclearization Seriously

Although China historically has not viewed North Korean denuclearization as an urgent task, U.S. government officials in Seoul told the Commission that Beijing appears to be genuinely concerned about North Korea's accelerating nuclear program. Four distinct but related perceptions appear to be driving China's evolving threat perception. First, Kim Jong-un's decision to proceed with a third nuclear test despite China's strong opposition likely convinced Beijing that Kim Jong-un is both reckless and unconcerned about whether North Korea's provocations will anger China. Second, China perceives the United States could use a North Korean provocation as a pretext to deepen its military engagement in the region, an outcome China desperately seeks to avoid.⁴⁹ Third, China is concerned that the North's progress on its nuclear program could precipitate a nuclear arms race in Northeast Asia. In particular, China fears U.S. allies South Korea and Japan may develop nuclear weapons, which it believes would seriously degrade China's security environment.⁵⁰ Fourth, China recognizes that North Korea's leverage—vis-à-vis China and the rest of the international community—grows as its nuclear program becomes more credible. Notably, none of these perceptions reflects concern about North Korean nuclear weapons posing a direct threat to China. Rather, China's concerns relate to how North Korean nuclear weapons could precipitate second-order effects that could result in a more vulnerable security environment for China.

China's heightened sense of anxiety over North Korea's nuclear program has not led to a wholesale shift in China's North Korea strategy, but it appears to have informed one recent policy adjustment: Beijing's reinvigorated efforts to resume the Six-Party Talks.* China's efforts to restart the Six-Party Talks have included holding a "Track 1.5" talk between officials from some of the countries involved in the Six-Party Talks;⁵¹ sending Chinese Vice Foreign Minister Liu Zhenmin to conduct "shuttle diplomacy" visits to Seoul and Pyongyang;⁵² holding meetings with senior U.S. officials;⁵³ and generally emphasizing the importance of the Six-Party Talks in official statements.⁵⁴

China's motivations for restarting the Six-Party Talks are manifold. According to the Chinese Ministry of Foreign Affairs, the aim of the negotiations has always been to "keep them talking and not fighting."⁵⁵ Ms. Kleine-Ahlbrandt testified to the Commission that China's motives are more complex:

China prioritized the talks because as Chair, it was guaranteed a central role in setting international policy toward [North Korea]. Beijing never expected that the talks would resolve the issue, rather, the process kept negotiations open and lessened the possibility of crises escalating, while allowing Beijing to exert control over the international re-

*The Six-Party Talks involving China, Japan, North Korea, Russia, South Korea, and the United States were established in 2003 to negotiate the termination of North Korea's nuclear program. After six rounds of negotiations, North Korea left the Six-Party Talks in 2009, and the negotiations have not resumed since. Jayshree Bajoria and Beina Xu, *The Six Party Talks on North Korea's Nuclear Program* (Council on Foreign Relations, September 30, 2013). <http://www.cfr.org/proliferation/six-party-talks-north-koreas-nuclear-program/p13593>.

*sponse by ensuring interaction with and influence over all parties.*⁵⁶

An additional driver of China's desire to revive the Six-Party Talks, according to Ms. Kleine-Ahlbrandt, is Beijing's fear that Pyongyang will "cut a deal" with Washington to denuclearize or otherwise thaw relations, which would leave China with diminished leverage and little control over the situation on the Peninsula.⁵⁷

Another potential indicator that denuclearization is a rising priority for Beijing is a growing emphasis on denuclearization in official Chinese statements. China's long-standing official line on North Korea has been "no war, no instability, no nukes."⁵⁸ This characterization conveys not only China's interests vis-à-vis North Korea, but also the prioritization of those interests, with denuclearization as the lowest priority.⁵⁹ Recently, however, some official Chinese statements, including those made at the July 2014 U.S.-China Strategic and Economic Dialogue, have begun to list "denuclearization" before "stability" in discussions of China's interests and priorities on the Korean Peninsula.⁶⁰

China Strengthens Sanctions Enforcement, but Problems Remain

China's enforcement of UN sanctions against North Korea has improved somewhat since North Korea's third nuclear test. In March 2013, China appeared to enhance border inspections of cargo traveling from China to North Korea.⁶¹ In April 2013, the Chinese government issued directives for "relevant agencies to take measures to strictly enforce" Security Council Resolution 2094.⁶² In August 2013, Chinese diplomats told researchers from International Crisis Group that China was for the first time strictly enforcing sanctions on North Korea.⁶³

These developments notwithstanding, gaps in China's sanctions enforcement remain. In testimony to the Senate Foreign Relations Committee in June 2014, U.S. Assistant Secretary of State for East Asian and Pacific Affairs Daniel R. Russel acknowledged China's efforts but insisted it "could do more to prevent North Korea from engaging in proliferation activities."⁶⁴ According to a UN Panel of Experts established to monitor enforcement of sanctions against North Korea, China's recent failures to fully enforce sanctions include:

- The Chinese port of Dalian in March 2013 appears to have served as a transshipment hub for five aluminum alloy rods (considered nuclear-related dual-use equipment by the International Atomic Energy Agency) from North Korea destined for Burma.⁶⁵

⁵⁶In addition to lax enforcement, China continues to use its position on the UN Security Council to weaken sanctions resolutions. According to Bruce Klingner, senior research fellow for Northeast Asia at the Heritage Foundation, "After the April 2012 missile launch, the U.S., South Korea, Japan, and the EU proposed adding 40 additional North Korean entities to the U.N. sanctions list. China vetoed all but three, severely limiting the scope of U.N. efforts against North Korea's prohibited nuclear and missile programs." Bruce Klingner, *North Korea: Sanctions, Nuclear and Missile Threat* (Heritage Foundation, April 2, 2014). <http://www.heritage.org/research/testimony/2014/04/north-korea-sanctions-nuclear-and-missile-threat>.

- China has made implementing UN prohibitions on transferring “luxury items” to North Korea difficult because its definition of “luxury goods” is much more limited than that of most other countries. For example, when Switzerland prohibited the sale of ski lifts to North Korea, a Chinese company acquired the contract and delivered the ski lifts to North Korea in January 2014.⁶⁶

Indeed, China’s partial efforts to enforce sanctions after the nuclear test were probably intended to signal displeasure to North Korea rather than truly seek to isolate the regime and cut off inputs to the North’s missile and nuclear programs. This is unsurprising given China’s rhetorical aversion to formal sanctions in general. China does not view sanctions as an effective tool to pressure North Korea; instead, China believes the best way to deal with the North is to engage it through dialogue and economic exchange.⁶⁷

China Continues to Prioritize Stability

The deterioration in Sino-North Korean relations has not led to a change in China’s long-standing strategic objective regarding North Korea: stability.* Beijing emphasized this in February 2014 when Chinese Foreign Minister Wang Yi articulated China’s “red line” on the Korean Peninsula, saying, “We will not allow war or instability on the Korean Peninsula.”⁶⁸ According to subject matter experts who met with the Commission in Washington and Seoul, China fears a North Korean collapse could provide a pretext for U.S. military intervention in North Korea and allow Washington greater influence over the future of the Peninsula.⁶⁹ In Beijing’s view, a sustained U.S.-South Korea allied military presence on the Peninsula is inimical to China’s security interests, and China would perceive the crossing of U.S. troops into the North as an urgent deterioration of its already-degraded security environment. This view is informed by China’s perception that the United States seeks to encircle and contain China with regional alliances and partnerships in Northeast Asia. China’s overriding imperative to avoid such a scenario is what drives its economic and political support for Pyongyang.

Does China Have Leverage over North Korea?

The United States and South Korea frequently call on China to use its close relationship with North Korea to pressure Pyongyang to halt its nuclear program and cease its destabilizing behavior.⁷⁰ China’s ambassador to the United States Cui Tiankai called Washington’s and Seoul’s requests for China to pressure North Korea a “mission impossible,” and claimed China does not have the kind of leverage over North Korea that the United States and others think it has.⁷¹

*Stability, in China’s perception, is characterized by the absence of unrest, upheaval, or other sudden shifts in a country’s internal situation and often is synonymous with regime stability.

Does China Have Leverage over North Korea?—Continued

Because China's economic and diplomatic support for North Korea is so great, Beijing's leverage over Pyongyang is indeed significant. Dr. Terry testified to the Commission that "by some estimates, Beijing provides some 80 percent of North Korea's consumer goods, 45 percent of its food, and 90 percent of its energy imports. Sino-North Korean trade accounts for nearly 90 percent of North Korea's global trade, while official Chinese investment accounts for almost 95 percent of foreign direct investment in the North."⁷² Several experts in China and the West have suggested Beijing could pressure Pyongyang to cease its provocative behavior by cutting off (or threatening to cut off) its exports, particularly oil exports, to North Korea. According to Ms. Kleine-Ahlbrandt, China has used this leverage—albeit in a limited way—by charging above market prices for food or delivering oil at slower rates to "annoy and send messages to North Korea."⁷³ Dr. Lankov also told the Commission that China sometimes uses its leverage over North Korea to deter Pyongyang from undertaking provocative actions such as missile and bomb tests.

In reality, although China does have leverage over North Korea, Beijing's uncompromising commitment to stability prevents it from using that leverage. Beijing fears applying too much pressure on the Kim regime could be destabilizing. Ms. Kleine-Ahlbrandt testified that some Chinese strategists believe the amount of pressure required to force North Korea to denuclearize would be so great that it almost certainly would result in regime change, which to China could be a worse outcome than a nuclear North Korea.⁷⁴

Witnesses who testified at the Commission's June 2014 hearing differed in their assessments of whether China will ever reach a "tipping point" at which it would deem the threat of a nuclear North Korea is greater than the threat of instability in North Korea and abandon its unconditional support for Pyongyang in favor of an approach more in line with that of South Korea and the United States. Dr. Terry opined China will only reconsider its support for North Korea if China "feel[s] like there is an imminent threat such as a conflict on the Peninsula."⁷⁵ Ms. Kleine-Ahlbrandt suggested China might reach a tipping point if North Korea instigated a major provocation along the China-North Korea border in a way that threatened China's own domestic stability.⁷⁶ Ambassador Joseph R. DeTrani, president of the Intelligence and National Security Alliance, suggested China may have already reached a tipping point. Referring to speculation that Beijing had gone to great lengths to convince Pyongyang not to carry out a planned fourth nuclear test in the spring of 2014,⁷⁷ Ambassador DeTrani said, "I don't think it's an accident we're not seeing a fourth nuclear test."⁷⁸

The Potential for North Korean Collapse: China's Interests and Potential Responses

Kim Jong-un has rapidly consolidated power since succeeding his father as North Korea's supreme leader in late 2011, defying expectations that his youth and inexperience would prevent him from exerting control over Pyongyang's elite leadership. Indeed, several subject matter experts consulted by the Commission in 2014 asserted that Kim Jong-un appears to have complete and unchallenged control over decision making in Pyongyang.⁷⁹ Kim Jong-un's successful purges of top Korean officials like his uncle, Jang Song-taek, demonstrate his ability to eliminate threats to his rule and command fear and respect from his inner circle.

Nevertheless, North Korea, like many authoritarian regimes, may be "stable until it's not,"⁸⁰ and the potential for regime instability or collapse exists.⁸¹ Indeed, Kim Jong-un's mysterious disappearance from public view for 40 days in September and October 2014 prompted some outside observers to speculate that a coup had taken place in Pyongyang.⁸² As this Report went to print, however, North Korean media reports suggest Kim Jong-un's absence was due to health problems and that he remains firmly in control of the country.⁸³

In response to a North Korean regime collapse, Beijing would make its long-term strategic objectives for the Peninsula—most importantly restoring stability and ensuring continued Chinese influence—its top priority. China almost certainly would intervene in the event of North Korean regime collapse.⁸⁴ Its response would be scenario-dependent and based on what course of action it judges most closely aligns with its national interests at that moment. These responses could include:

- *Reinforcing Border Security:* China fears regime collapse or large-scale unrest in North Korea could precipitate a refugee crisis with potentially millions of North Koreans crossing the border into China. According to Bruce W. Bennett, senior defense analyst at the RAND Corporation and author of *Preparing for the Possibility of a North Korean Collapse*, China likely would avoid such a situation by deploying troops to seal China's side of the border with North Korea and potentially creating a buffer zone within North Korea in which to set up refugee camps.⁸⁵
- *Securing Nuclear Weapons:* According to Dr. Bennett, interlocutors who met with the Commission in Seoul, and others, China likely would cross into North Korea to secure weapons of mass destruction, particularly nuclear weapons, in the event of regime collapse.*
- *Maintaining a Strategic Buffer:* According to subject matter experts who met with the Commission in Seoul, China prefers a divided Korean Peninsula over a unified one because it values

*North Korea's Yongbyon nuclear facility is about 80 miles from the Chinese border. Bruce W. Bennett, *Preparing for the Possibility of a North Korean Collapse* (RAND Corporation, 2013), pp. 89–90. http://www.rand.org/content/dam/rand/pubs/research_reports/RR300/RR331/RAND_RR331.pdf. See also Andrew Scobell and Mark Cozad, "China's North Korea Policy: Rethink or Recharge?" *Parameters* 44:1 (Spring 2014): 58–60. http://www.strategicstudiesinstitute.army.mil/pubs/parameters/issues/Spring_2014/5_ScobellCozad.pdf.

North Korea as a buffer between itself and the U.S.-allied South. Should regime instability or collapse occur, China would take steps to ensure North Korea continues to serve as a strategic buffer.* However, if China judged unification under the South to be the inevitable outcome of instability or collapse in the North, it likely would go to great lengths to ensure that U.S. troops on the Peninsula remain as far south as possible.

China is not the only country planning for contingency scenarios in North Korea. U.S. government officials in Seoul told the Commission that the United States in concert with South Korea plans for all contingencies on the Korean Peninsula. According to policy experts who met with the Commission at the Asan Institute for Policy Studies in Seoul, Chinese officials are reluctant—although less reluctant than in the past—to discuss North Korean collapse scenarios with their South Korean counterparts. At the unofficial level, however, Chinese and South Korean think tank and academic experts discuss North Korean regime collapse and participate in regime collapse war games.

China's mistrust of the U.S.-South Korea alliance, its alliance with the North, and its unique security priorities vis-à-vis the North prevent it from meaningfully engaging with South Korea and the United States in discussions about collapse scenarios and contingency planning.⁸⁶ As a result the three countries most likely to intervene in North Korea in the event of regime collapse—the United States, China, and South Korea—are not fully informed of each other's intentions, which could lead to accidents, miscalculation, and conflict should regime collapse occur.

U.S.-China Relations in the North Korea Context

According to the Obama Administration, North Korea is the United States' biggest security concern in East Asia.⁸⁷ The *2014 Quadrennial Defense Review*, a legislatively-mandated review of the U.S. Department of Defense's strategy and priorities, describes North Korea's long-range missile and weapons of mass destruction programs as a "significant threat to peace and stability on the Korean Peninsula and in Northeast Asia" and a "growing, direct threat to the United States."⁸⁸

Unfortunately, as the need for cooperation between China and the United States on North Korea grows more urgent, China increasingly views U.S. interests on the Peninsula as inimical to its own. As discussed earlier, the United States is central to China's calculus when it comes to devising and implementing its North Korea policies. Ms. Kleine-Ahlbrandt testified:

When China looks at North Korea, it does so through an East Asian strategic lens with growing rivalry with the United States as the focal point. Despite its interests being seriously harmed by North Korean behavior, Beijing be-

*According to Dr. Bennett, such steps could include seeking to sustain the incumbent North Korean government, supporting a new, pro-China North Korean government, or occupying parts of North Korean territory along the Chinese border in order to maintain a buffer zone. Bruce W. Bennett, *Preparing for the Possibility of a North Korean Collapse* (RAND Corporation, 2013), pp. 89–90. http://www.rand.org/content/dam/rand/pubs/research_reports/RR300/RR331/RAND_RR331.pdf.

believes that Washington and its allies pose a larger threat to China's strategic interests than Pyongyang does. Consensus amongst analysts in Beijing is that the U.S.-led bloc is using North Korea and tensions in the South and East China Seas as excuses to deepen the Asia rebalance, strengthen regional alliances, expand military exercises and move missile defense and military assets to the region. China is increasingly uncomfortable with long-standing U.S. defense relationships with countries around China's periphery (including South Korea, Japan, Taiwan, the Philippines, Vietnam, Thailand, India, Pakistan, Afghanistan, and Kyrgyzstan). From the Chinese perspective, China-North Korea relations are intrinsically part of Sino-U.S. geopolitical competition in East Asia. As long as China continues to view the U.S. with such strategic mistrust and suspicion, a fundamental shift in its policy toward North Korea remains unlikely.⁸⁹

Moreover, China believes Washington (as well as Seoul) is as much to blame for instability on the Korean Peninsula as Pyongyang. For example, China resolutely opposes U.S. military exercises with South Korea, saying they provoke Pyongyang and contribute to a hostile environment on the Peninsula.⁹⁰ In some official statements, China appears equally disapproving of U.S.-South Korea military drills and North Korean nuclear test threats.*

China's distrust of the United States likely will continue to inform China's approach to relations with North Korea, especially if U.S.-China security relations continue to deteriorate in other areas, such as over territorial disputes in the East and South China Seas. However, Dr. Terry assessed in her testimony to the Commission that the recent deterioration in relations between China and North Korea might present an opportunity for the United States to "take advantage of [China's] concerns" and pursue a more robust dialogue with China on the future of the Korean Peninsula.⁹¹

Conclusions

- North Korea has the potential to be one of the most dangerous flashpoints in U.S.-China relations. Although regime collapse or a major humanitarian disaster in North Korea do not appear likely in the near term, such an event could lead to war on the Korean Peninsula, which likely would draw simultaneous military intervention jointly by the United States and South Korea and by China. At the current time, trilateral communication between these countries about their intentions and possible actions in the event of a major contingency in North Korea appears dangerously insufficient to avoid accidents, miscalculation, and conflict.

*A Chinese Ministry of Foreign Affairs spokesperson replied to a question about tensions on the Korean Peninsula by answering that China is "opposed to any action that may lead to the escalation of tension. We disapprove of joint military drills and the threat of nuclear tests." China Ministry of Foreign Affairs, "Foreign Ministry Spokesperson Hua Chunying's Regular Press Conference on April 15, 2014," April 15, 2014. http://www.fmprc.gov.cn/mfa_eng/xwfw_665399/s2510_665401/2511_665403/t1147430.shtml.

- Sino-North Korean relations are at their lowest point in decades. This is driven largely by China's frustration over North Korea's destabilizing behaviors since late 2012, including a nuclear test and a high volume of missile tests. Beijing's frustration with Pyongyang notwithstanding, China continues to support North Korea in the interest of stability. China assesses that as long as the North Korean regime remains stable, North Korea will continue to exist as a buffer between itself and U.S.-allied South Korea. Preserving this buffer is the fundamental objective of China's relationship with North Korea.
- China appears to be genuinely concerned about North Korea's nuclear program. This concern is mostly over second-order effects of the North's nuclear advances. For example, China believes North Korea's continued progress on its nuclear program incentivizes the United States to strengthen its military presence and capabilities on the Korean Peninsula. Further, China believes the North's nuclear progress could prompt U.S. allies Japan and South Korea to develop their own nuclear programs. Either of these outcomes would constitute a major deterioration of China's security environment.
- Since 2013, China has redoubled its efforts to restart the Six-Party Talks. Although Beijing is skeptical North Korea will halt its nuclear program as a result of the Six-Party Talks, it values the forum because it ensures China will have a central role in the international community's interaction with North Korea and allows China to exert influence over the parties involved.
- China increasingly views U.S. interests on the Korean Peninsula as inimical to its own. Beijing assumes Washington uses North Korean provocations as a pretext to bolster the U.S. military presence and capabilities on the Korean Peninsula and justify a "rebalance" policy that is actually aimed at containing China.
- China's relationship with South Korea is significantly improving in both the economic and security realms. Beijing's efforts to strengthen ties with Seoul reflect China's frustration with North Korea and are meant in part to signal its disapproval to Pyongyang. China's pursuit of stronger ties with South Korea also is aimed in part at drawing South Korea away from its alliance with the United States. As its influence over South Korea grows, China judges it eventually will be in a stronger position to pressure South Korea to reduce its security ties with the United States.

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SECTION 3: TAIWAN

Introduction

The continued growth of cross-Strait trade and investment and the pursuit of cross-Strait trade agreements under President Ma Ying-jeou are raising public concern in Taiwan, including concern about uneven competition from mainland Chinese firms and exports and Taiwan's vulnerability to Chinese influence and economic coercion. Cross-Strait relations continue to deepen, but negotiations slowed in the past year due to a student-led protest movement that challenged the existing cross-Strait negotiation framework and ratification process. To counterbalance its economic dependence on China and increase its global competitiveness, Taiwan continued its longstanding efforts to diversify its trading partners through bilateral and multilateral trade agreements and to reinvigorate its economic relationship with the United States.

The United States and Taiwan raised the visibility of their relationship with the first visit of a U.S. Cabinet-level official since 2000 and a meeting under the bilateral Trade and Investment Framework Agreement that yielded positive yet limited steps forward for U.S. firms. In an effort to address the threat posed to Taiwan by China's military modernization, the United States and Taiwan maintain a strong but low-profile security partnership through military-to-military exchanges and arms sales.

This section—based on a June 2014 Commission hearing on cross-Strait and U.S.-Taiwan economic and security developments, briefings by nongovernmental experts on Taiwan throughout 2014, and staff research and analysis—examines Taiwan economic issues; cross-Strait political relations; Taiwan's international engagement; Taiwan military and security issues; and U.S.-Taiwan relations. This section concludes with a discussion of the implications of these developments for the United States.

Taiwan Economic Issues

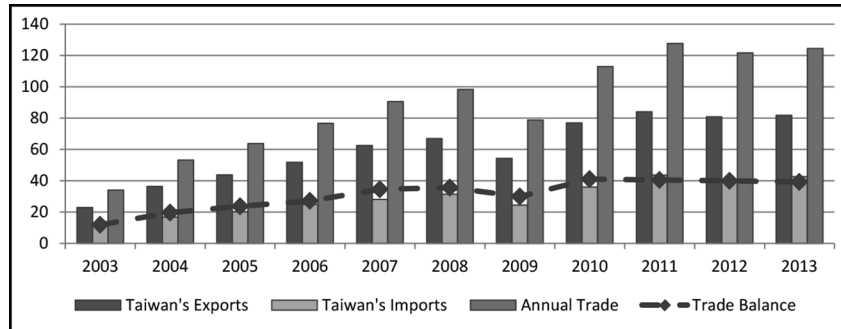
Cross-Strait Trade and Investment

China is Taiwan's largest trading partner,* largest export market, and largest source of imports. In 2013, annual cross-Strait trade reached \$124.4 billion, a nearly 27 percent increase since 2008 (see Figure 1). This expansion continued through the first seven months of 2014, growing 4.1 percent when compared with the same period last year. Taiwan's exports to China largely drive this relationship. They composed nearly two-thirds of total bilateral trade and accounted for Taiwan's \$39.2 billion trade surplus with

*China became Taiwan's largest trading partner in 2005. Bureau of Foreign Trade (Taiwan), "Trade Statistics." <http://cus93.trade.gov.tw/ENGLISH/FSC/>.

China in 2013. This year, China, for the first time, surpassed Japan to become Taiwan's largest source of imports.¹

Figure 1: Cross-Strait Trade, 2003–2013
(US\$ billions)



Source: Bureau of Foreign Trade (Taiwan).

Approximately 45 percent of the world's microchip* output is exported to China for both domestic consumption and as components and other products for export.² Taiwan, the world's largest semiconductor manufacturer, has tapped into this market, supplying 31 percent of China's total imports of semiconductors in 2013.³ Taiwan firms generally manufacture microchips and other semiconductor-related products in Taiwan for assembly and testing in China.⁴

Microchips are Taiwan's largest export to and largest import from China (see Table 1).⁵ In 2013, semiconductor-related exports, including microchips, semiconductors, and printed circuit boards, made up three of the top five exports to China and accounted for nearly a quarter of Taiwan's total global exports of these products.⁶ Microchips and semiconductors continued to dominate Taiwan's exports to China in 2014. A comparison of the first seven months of 2014 to the same period last year shows that semiconductor exports increased 21 percent and microchip exports increased 17 percent.⁷

Table 1: Taiwan's Major Exports and Imports to China
(US\$ billions)

Top Taiwan Exports to China		
Product	2013	2014 (January–July)
Microchips	13.1	8.6
Liquid crystal display (LCD) products	12.4	6.1
Semiconductors	3.6	2.4
Cyclic hydrocarbons	3.4	1.9
Printed circuit boards	2.3	1.3

* Semiconductor products such as microchips and printed circuits are incorporated into a wide range of modern electronics such as cellular telephones, computers, cars, military systems, and planes. Semiconductor Industry Association, "SIA Infographic." <http://www.semiconductors.org/clientuploads/Comms/sia-new-11-gr.pdf>.

Table 1: Taiwan's Major Exports and Imports to China—Continued

(US\$ billions)

Top Taiwan Imports from China		
<i>Product</i>	<i>2013</i>	<i>2014 (January–July)</i>
Microchips	5.4	3.7
Cellular telephones	3.2	1.7
Flat-rolled stainless steel	1.5	1.2
Electronic computers	2.0	1.1
Chemical elements for use in electronics	1.2	0.9

* Re-export and re-import figures are included.

Note: Listed in order of largest amount based on 2014 figures.*Source:* Bureau of Foreign Trade (Taiwan).

The concentration of Taiwan's exports to China contrasts with the diversity of Taiwan's imports from China. Taiwan's imports of cellular telephones and electronic computers, the second and third largest imports, reflect China's dominance in manufacturing.⁸ A 2013 Bank of America-Merrill Lynch report shows China assembled 70.6 percent of all the world's cellular telephones and 90.6 percent of all the personal computers produced in 2011.⁹ Taiwan's imports of cellular telephones from China increased nearly 15 percent since 2012 to reach \$3.2 billion in 2013.¹⁰

Imports from China pose stiff competition for Taiwan's domestic industries, particularly steel manufacturers. Since 2009, Taiwan's imports of flat-rolled stainless steel from China have grown 1,257 percent and now account for nearly three-quarters of Taiwan's total stainless steel imports.¹¹ Tariff reductions by Taiwan and oversupply in China have driven down prices for mainland steel over the last five years.¹² Competition from these imports has forced some smaller Taiwan producers into bankruptcy, and the combined impact of Chinese and Korean steel imports led to a 30 percent decrease in production by Taiwan's top two stainless steel firms.¹³ (For more information on overcapacity in China's steel sector, see Chapter 1, Section 1, "Year in Review: Economics and Trade.")

China is the leading recipient of Taiwan's foreign direct investment (FDI) as Taiwan's firms seek to take advantage of China's enormous market, relatively low labor costs, geographic proximity, and close historical, cultural, and linguistic ties. Taiwan's annual FDI to China reached a peak of \$14.6 billion in 2010 and has since tapered down to \$9.2 billion in 2013 (see Table 2). Contributing to this decline are lower profit margins as labor costs rose and as reduced demand from China for Taiwan manufactured goods cut exports.¹⁴ Despite the decline, China accounted for 64 percent of Taiwan's total outward FDI in the first eight months of 2014.¹⁵ Of this \$6.5 billion of investment, the leading recipients were financial and insurance (18.2 percent), wholesale and retail trade (13.0 percent), electronic parts and components manufacturing (10.7 percent), and chemical material manufacturing (10.1 percent).¹⁶ This concentration in manufacturing reflects the cross-Strait production cluster, where Taiwan firms export components for assembly in China. In 2014, financial and insurance sector investment became the largest recipient sector due to greater market access and broader easing of

restrictions in China while manufacturing sector investment costs rose.¹⁷

Table 2: Cross-Strait FDI Flows, 2009–2014
(US\$ millions)

	2009	2010	2011	2012	2013	January– August 2014
Taiwan's FDI to China	\$7,143	\$14,618	\$14,377	\$12,792	\$9,190	\$6,484
China's FDI to Taiwan	\$37	\$94	\$52	\$332	\$349	\$239

Source: Ministry of Economic Affairs, Overseas Chinese and Foreign Investment Commission (Taiwan).

Although restricted, Chinese FDI in Taiwan is growing rapidly.¹⁸ Since 2010, Chinese FDI has grown nearly 300 percent from \$94 million to \$349 million in 2013 due to the loosening of investment caps and regulations* on mainland investment into Taiwan under President Ma.¹⁹ From June 2009 to August 2014, Chinese investment by value is concentrated in wholesale and retail trade (24.4 percent), banking services (18 percent), harbor port services (12.6 percent), and electronics parts and components manufacturing (10.4 percent).²⁰

Cross-Strait Economic Agreements

Since President Ma's first term in office began in 2008, Taiwan and China have signed 21 agreements to broaden the cross-Strait economic relationship and deepen cross-Strait ties (see Table 3). The two most important of these agreements are the Economic Cooperation Framework Agreement (ECFA), signed in June 2010, and the follow-on Cross-Strait Services Trade Agreement (CSSTA).[†] The ECFA provides the foundation for future economic integration and lays out a roadmap for four subsequent agreements concerning investment protection, trade in goods, trade in services, and dispute settlement. ECFA has opened up cross-Strait trade, but critics argue that gains from ECFA and CSSTA largely benefit a few, large Taiwan firms at the expense of small and medium-sized enterprises.[‡]²¹

*For example, in March 2012, Taiwan loosened mainland investment caps originally set at a 10 percent stake in local firms and 50 percent in joint ventures in Taiwan's semiconductor, liquid crystal display, integrated circuit assembly and testing, microelectronics production equipment, and metal tool manufacturing sectors. Although, loosened, Taiwan government approval is still required for all investments, and controlling stakes or appointing managers in mainland investments is still prohibited. PWC, *Chapter 4: The Bigger Picture—China's Impact on the Semiconductor Industry 2012 Update*, September 2012. <http://www.pwc.com/gx/en/technology/chinas-impact-on-semiconductor-industry/assets/pwc-china-semicon-2012-chp4-pdf.pdf>.

[†]For more information on the ECFA and CSSTA, see U.S.-China Economic and Security Review Commission, Chapter 3, Section 2, "Taiwan," *2013 Annual Report to Congress*, November 2013, pp. 329–330.

[‡]In June 2010, President Ma and Dr. Tsai Ing-wen, then Chairwoman of Taiwan's main opposition party, the Democratic Progressive Party, weighed the benefits and risks of ECFA in a high-profile, televised policy debate. This was the first-ever televised debate on a major policy issue between the leaders of Taiwan's ruling party and the major opposition party outside of a presidential election.

Table 3: Cross-Strait Agreements, 2008–2014

Year	Agreement
2008	<ul style="list-style-type: none"> • Cross-Strait Agreement Signed Between Straits Exchange Foundation (SEF) and Association for Relations Across the Taiwan Strait (ARATS) Concerning Mainland Tourists Traveling to Taiwan • SEF–ARATS Minutes of Talks on Cross-Strait Charter Flights • Cross-Strait Postal Service Agreement • Cross-Strait Air Transport Agreement • Cross-Strait Sea Transport Agreement • Cross-Strait Food Safety Agreement
2009	<ul style="list-style-type: none"> • Agreement on Joint Cross-Strait Crime-fighting and Mutual Judicial Assistance • Cross-Strait Financial Cooperation Agreement • Cross-Strait Air Transport Supplementary Agreement • Cross-Strait Agreement on Cooperation of Agricultural Product Quarantine and Inspection • Cross-Strait Agreement on Cooperation in Respect of Fishing Crew Affairs • Cross-Strait Agreement on Cooperation in Respect of Standards, Metrology, Inspection and Accreditation
2010	<ul style="list-style-type: none"> • Cross-Straits Economic Cooperation Framework Agreement • Cross-Strait Agreement on Intellectual Property Right Protection and Cooperation • Cross-Strait Agreement on Medical and Health Cooperation
2011	<ul style="list-style-type: none"> • Cross-Strait Agreement on Nuclear Power Safety and Cooperation
2012	<ul style="list-style-type: none"> • Cross-Strait Agreement on Investment Protection and Promotions • Cross-Strait Customs Cooperation Agreement
2013	<ul style="list-style-type: none"> • Cross-Straits Service Trade Agreement
2014	<ul style="list-style-type: none"> • Cross-Strait Collaboration Agreement on Seismological Monitoring • Cross-Strait Collaboration Agreement on Meteorology

Source: Mainland Affairs Council (Taiwan).

The ECFA provided an early harvest program to reduce tariffs in both countries.* President Ma highlighted the benefits of the program in April 2014, claiming Taiwan’s firms had saved over \$1 billion in customs duties.²² However, the ultimate effects of the ECFA remain controversial. One report by the Legislative Yuan, Taiwan’s legislature, in 2012 found “a reverse effect on cross-strait trade” that instead boosted the share of China-made products in Taiwan. The report noted that market share of Taiwan’s early harvest products in China eroded for five consecutive years and raised public concern on the benefits of additional economic agreements with China.²³

The CSSTA, signed in June 2013, would eliminate investment restrictions and other barriers across 80 service industries in China and 63 service industries in Taiwan. Taiwan’s service sector is already an important driver of Taiwan’s economy, accounting for 70 percent of its gross domestic product (GDP) and nearly 60 percent of its workforce.²⁴ This sector could benefit from a deal opening up China’s banking and financial industries to both investment and

*An “early harvest” program allows negotiators in trade talks to lower trade barriers immediately to certain goods and services even before the final agreement on the entire agreement is reached.

imports of services.²⁵ Taiwan's financial and retail-related services compose roughly 25 percent of GDP and would gain advantages from liberalization through the ability to establish sub-branches in parts of China and greater access to the renminbi service platform.²⁶ But Taiwan's legislature has yet to ratify the agreement in the face of political and public opposition. Opponents of the CSSTA fear the agreement creates unfair competition for local firms and moves Taiwan closer toward political unification with the Mainland.

Trade agreements under ECFA—such as the Early Harvest Program and CSSTA—generally foster uneven competition between Taiwan's small and medium-sized enterprises and large, state-owned Chinese firms, according to JoAnn Fan, a visiting fellow at The Brookings Institution who testified at the Commission's June hearing.²⁷ The trade gains are usually limited to a few beneficiaries while most firms and workers "appear to be left without substantial recourses or trade adjustment compensations."²⁸ For example, opening up the cross-Strait tourism sector would pit over 3,000 Taiwan small and medium-sized firms against three Chinese state-owned firms. Chinese and Hong Kong firms retain a near monopoly on Chinese tourists traveling to Taiwan, providing complete service for Chinese tourists—from travel agents to airline travel to hotel operators and tour bus companies.²⁹ Therefore, small Taiwan firms are unlikely to reap the expected benefits of opening up this sector in either Taiwan or China.

In March 2014, the Taiwan public launched massive protests, known as the Sunflower Movement, and pushed Taiwan's legislature to delay ratification of the CSSTA (see "The Sunflower Movement" later in this section). The protesters highlighted their concerns in a public statement:

Regardless of the political division between pro-unification with China and those pro-independence for Taiwan, this trade agreement will allow large capital to devour the majority of small peasants, laborers and small businesses, not to mention the difficulties the future generation of Taiwan will face.³⁰

These protests played a large role in temporarily postponing cross-Strait negotiations and pushing the Legislative Yuan to implement an oversight mechanism on cross-Strait agreements and delay CSSTA ratification.³¹ President Ma has since revitalized cross-Strait negotiations with the restart of discussions over a potential goods trade agreement in September, but it is unclear how successful these on-going negotiations will be given Taiwan citizens' strong opposition to the CSSTA.³²

Economic Security Issues Arising from Expanding Cross-Strait Ties

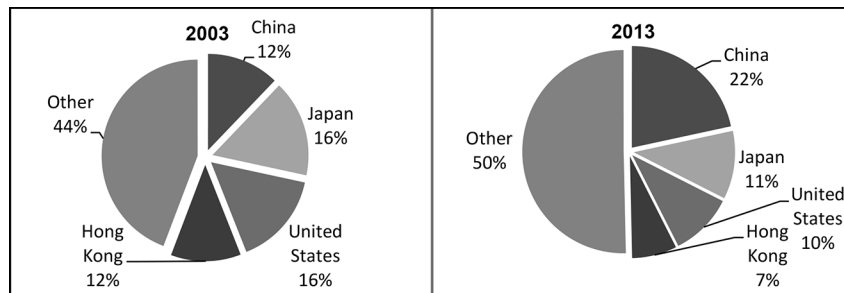
Cross-Strait economic integration presents numerous opportunities and risks for Taiwan. Large Taiwan firms have taken advantage of expanding market access in China and lower tariffs on goods exported to China to create advantageous production clusters.³³ For example, Hon Hai Precision Industry Company has successfully capitalized on China's relatively low-cost, skilled labor to become the world's largest electronics manufacturer and Apple Cor-

poration's main manufacturing partner.³⁴ In addition, Taiwan Semiconductor Manufacturing Company, the world's largest semiconductor manufacturer, benefits from lower tariffs as it exports its products to China for final assembly and testing and gains easy access into its customers' various electronic products' supply chains in China.³⁵

At the same time, however, this integration has opened up sectors in Taiwan to greater mainland competition and raised Taiwan's vulnerability to China's political and economic coercion. A May 2014 investigation by *CommonWealth* magazine found that despite overall growth of Taiwan's exports to China, the market share of these early harvest products in China has declined.³⁶ Taiwan's steel sector, one of the expected beneficiaries of ECFA's Early Harvest Program, has faced significant financial losses from competition with Chinese firms that offered stainless steel at 30 percent lower prices.³⁷ The rapid growth of cheap, flat-rolled stainless steel imports from China spurred Taiwan to impose emergency, temporary antidumping measures in August 2013.³⁸

As Taiwan's reliance on China as a trading partner has increased from 12 percent of annual trade in 2003 to 22 percent in 2013, its overall share of trade with its other major trading partners has necessarily decreased (see Figure 2). Demand from China accounts for approximately 26 percent of Taiwan's total exports, and China is now the largest source of Taiwan's imports at 17 percent, according to figures for the first seven months of 2014.³⁹ As China's economy slows and production costs in China rise, this dependency creates potential risks to Taiwan's export-dependent economic growth and returns on foreign investment in China.

Figure 2: Comparison of Taiwan's Largest Trading Partners, 2003 and 2013



Source: Bureau of Foreign Trade (Taiwan).

Furthermore, this dependency may provide additional leverage to China as it seeks to tie Taiwan closer to China and make progress on its long-term goal of unification with Taiwan. Taiwan is "facing a turning point" in cross-Strait relations, according to former U.S. Secretary of State Hillary Clinton. She warned of Taiwan's vulnerability from its increased reliance on China and linked Taiwan's greater economic dependency with political dependency. "Every time you make a decision, whether it is in a trade agreement or on flight routes, you must take a prudent view of the expected results and whether there may be unintended consequences," Secretary Clinton warned.⁴⁰

Chinese Influence in Taiwan's Media

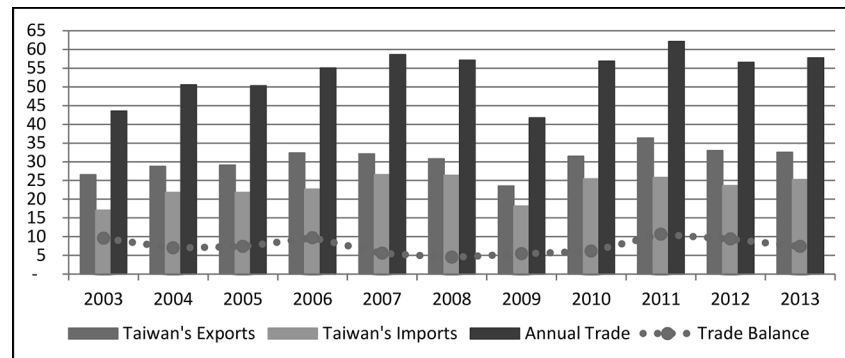
Potential investment in the publishing and media sector by high-profile Taiwan businesspersons who favor unification and/or have commercial interests in China continues to raise public concern in Taiwan about increasing Chinese influence on Taiwan's media.* Furthermore, although Chinese investment in this sector is tightly regulated, Chien-Jung Hsu, adjunct research associate at Monash University in Melbourne, Australia, found China has stepped up its efforts to influence Taiwan's media directly. China does so by encouraging the purchase of Taiwan's media outlets by pro-China Taiwan businesspersons, pressuring Taiwan media owners to censor by offering or restricting mainland sales and investment opportunities, and purchasing increasing numbers of advertisements to influence public opinion.⁴¹ Reporters Without Borders' *2014 World Press Freedom Index* emphasized this concern. "China's growing economic weight is allowing it to extend its influence over the media in Hong Kong, Macau, and Taiwan, which had been largely spared political censorship until recently."⁴²

Developments in U.S.-Taiwan Economic Relations

The United States and Taiwan maintain a robust economic relationship. The United States continues to be Taiwan's largest foreign investor and is Taiwan's third-largest trading partner, accounting for 10 percent of Taiwan's global trade in 2013.⁴³ For the United States, Taiwan is its 12th largest trading partner, composing 1.7 percent of total U.S. trade in the first seven months of 2014.⁴⁴

Annual bilateral trade reached \$57.3 billion in 2013 and continued to grow during the first seven months of 2014 (see Figure 3). Bilateral trade figures during this period grew 6.0 percent over the same period in 2013.⁴⁵ Taiwan maintained a \$7.4 billion trade surplus with the United States in 2013.⁴⁶ This surplus had been shrinking since 2011.⁴⁷

Figure 3: U.S.-Taiwan Trade, 2003-2013
(US\$ billions)



Source: Bureau of Foreign Trade (Taiwan).

*For a recent example of a pro-China Taiwan businessperson's attempted acquisition of a Taiwan media outlet, see U.S.-China Economic and Security Review Commission, Chapter 3, Section 2, "Taiwan," *2013 Annual Report to Congress*, November 2013.

These trade flows, specifically Taiwan's exports to the United States, are more diversified than Taiwan's trade to China but similarly reflect the importance of the semiconductor industry to Taiwan's economy. Taiwan exports to the United States are mainly composed of manufactured parts and accessories and cover a relatively wide range of sectors including cellular telephones, motor vehicle parts and accessories, and office machine parts and accessories (see Table 4). By contrast, Taiwan's imports from the United States are dominated by semiconductor-related equipment, agriculture, and arms sales. Arms sales have constituted an important component of trade, with deliveries of U.S. arms to Taiwan amounting to \$3.0 billion from 2008 to 2011.⁴⁸ For more information, see "Developments in U.S.-Taiwan Military and Security Relations" later in this section.

Table 4: Taiwan's Major Exports and Imports to the United States
(US\$ billions)

Top Taiwan Exports to the United States		
<i>Product</i>	<i>2013</i>	<i>2014 (January–July)</i>
Cellular telephones	2.6	1.4
Tractor and special purpose motor vehicle parts and accessories	1.5	0.9
Fasteners	1.3	0.8
Office machines parts and accessories	1.4	0.8
Microchips	1.4	0.8
Top Taiwan Imports from the United States		
<i>Product</i>	<i>2013</i>	<i>2014 (January–July)</i>
Semiconductor, microchip, and LCD manufacturing machines	3.1	1.9
Microchips	2.5	1.6
Miscellaneous	1.7	1.3
Petroleum and coal oils and oil products	0.9	0.6
Helicopters, satellites, and spacecraft launch vehicles	0.1	0.6
Iron and steel waste and scrap	1.1	0.6
Soy beans	0.6	0.5

* Re-export and re-import figures are included.

Note: Listed in order of largest amount based on 2014 figures.

Source: Bureau of Foreign Trade (Taiwan).

Taiwan's largest U.S. import is the machinery to make semiconductors and liquid crystal display (LCD) products. Taiwan's imports of this machinery totaled \$3.1 billion in 2013, accounting for 26 percent of Taiwan's total import market of this machinery.⁴⁹ According to figures from the industry association SEMI, Taiwan's billions of dollars of investment in the last two years makes it the single largest semiconductor equipment market in the world.⁵⁰ This investment partly accounts for the 20 percent increase between 2012 and 2013 of Taiwan's imports of these machines, though growth slowed in the first seven months of 2014.⁵¹

Taiwan is also a major importer of U.S. agricultural goods, constituting the seventh largest U.S. agricultural export market in 2013.⁵² In particular, soybeans have become a major export to Taiwan as Taiwan's demand for soybean meal for livestock feed grows. According to AgroChart's *2014 Annual Report*, the United States has once again become the largest supplier of soybeans to Taiwan and accounts for roughly 50 percent of Taiwan's import market. U.S. soybeans are favored over South American competitors partly due to their superior protein quality.⁵³ In 2013, soybeans were the sixth largest import from the United States at \$615 million. Demand in the first seven months of 2014 grew 36 percent in comparison to the same period last year.⁵⁴

Despite the recent growth spurt in bilateral trade this year, U.S.-Taiwan economic relations have been largely unchanged since 2008. Annual bilateral trade grew only 1 percent from 2008 to 2013.⁵⁵ President Ma has sought to reinvigorate these ties by enacting trade liberalization policies and opening new bilateral trade talks. The American Chamber of Commerce in Taipei's *2014 White Paper* found that Taiwan's government has made significant progress in the last year on improving its business climate. Of the 103 suggestions for improving the business climate in its *2013 White Paper*, the organization noted resolution of six of the issues raised and satisfactory progress on 21 others.⁵⁶

President Ma also hopes to establish a free trade agreement (FTA) or bilateral investment agreement with the United States but faces obstacles as a result of disputes over pork imports, pharmaceutical intellectual property rights, and private-equity investment regulations. In November 2013, former Taiwan vice president Vincent Siew led a large trade delegation of senior Taiwan industry leaders to the United States in support of enhancing the U.S.-Taiwan economic relationship.⁵⁷ This trip led to millions of dollars of investment in the United States and elevated U.S.-Taiwan economic and business relations within U.S. government policy.⁵⁸ More specifically, Hon Hai announced a \$30 million investment in a high-tech manufacturing facility in Pennsylvania and a \$10 million research and development fund at Carnegie Mellon University.⁵⁹

President Ma has made significant efforts to revitalize the Trade and Investment Framework Agreement (TIFA) negotiations. The U.S.-Taiwan TIFA is an annual, high-level forum on economics and trade for trade dispute resolution, trade promotion, and investment cooperation. The TIFA talks were suspended in 2007 due to the dis-

pute over Taiwan's ban on importing U.S. beef* and did not resume until the issue was partially resolved in 2013.†⁶⁰ In April 2014, the United States and Taiwan held their eighth TIFA meeting and noted progress on easing restrictions on cross-border data transfer in the financial sector and addressing the concerns of pharmaceutical firms regarding intellectual property rights.‡

However, future progress may be constrained by Congressional demands for the removal of Taiwan's restrictions on U.S. pork imports and additional improvement in pharmaceutical and private-equity disputes.⁶¹ Although some progress has been made in the pharmaceutical and private-equity sectors, Taiwan's ability to reduce barriers on pork is hampered by its politically powerful domestic pork industry and aversion by Taiwan's citizens to the use of ractopamine in pork production.⁶² Until this row is resolved, progress on advancing the U.S.-Taiwan economic relationship through trade agreements likely will remain limited.

Diversification of Trading Partners

Taiwan's export-oriented economy requires the expansion of economic ties with the Asia Pacific region to maintain its competitiveness as one of the world's largest suppliers of electronic products and components.⁶³ Taiwan's exports are a critical driver of its economic growth, accounting for 62 percent of GDP. Taiwan's international status and strong opposition from China limit its ability to negotiate FTAs or other trade liberalization accords, thereby placing its companies at a disadvantage.⁶⁴ For example, the FTA between South Korea, Taiwan's main economic competitor, and the United States eliminates tariffs for specific Korean imports and thereby provides Korean firms with a 2.5 to 10 percent price advantage over competitors in Taiwan.⁶⁵ Despite this disadvantage, Taiwan's GDP grew 2.1 percent in 2013 and is expected to grow 3.4 percent in 2014.⁶⁶

Taiwan has placed a high priority on joining bilateral and regional trade agreements, but the government achieved little success in the past year. In 2013, Taiwan signed FTAs with New Zealand, the first country without official diplomatic ties with Taiwan to do so, and with Singapore. Although these agreements represent a step toward enhancing Taiwan's export competitiveness, trade

*Taiwan banned imports of U.S. beef because Taiwan citizens were concerned over insufficient safeguards to prevent mad cow disease and U.S. farmers' use of ractopamine, a controversial feed additive that promotes leanness in meat. Ractopamine is widely used in U.S. pork and beef production, but Taiwan, the European Union, and China have banned the use of ractopamine based on health and safety concerns. J.R., "Gored," *Banyan Asia (Economist blog)*, March 8, 2012. <http://www.economist.com/blogs/banyan/2012/03/taiwan-america-and-meat-wars>; Shirley Kan and Wayne Morrison, *U.S.-Taiwan Relationship: Overview of Policy Issues* (Congressional Research Service, April 22, 2014), pp. 34–36.

†The issue was partially resolved when the Taiwan government established a maximum residue limit for ractopamine in beef in September 2012, allowing U.S. beef exports greater access to Taiwan. In 2013, the U.S. became Taiwan's largest beef supplier by value. Cleo Fu and Emily Scott, "U.S. Beef Exports to Taiwan Realize 2013 as Record Year," *USDA Foreign Agricultural Service*, March 31, 2014. http://gain.fas.usda.gov/Recent%20GAIN%20Publications/U.S.%20Beef%20Exports%20to%20Taiwan%20Realize%202013%20as%20Record%20%20Year_Taipei_Taiwan_3-31-2014.pdf.

‡Taiwan agreed to allow financial institutions to store their data on servers outside of Taiwan and has made progress in clarifying investment regulations in the private equity sector. In exchange, the United States agreed to allow imports of Taiwan guava and orchids. "U.S. Secures Pledges on Data Transfers, Pharmaceuticals from Taiwan," *China Trade Extra*, April 18, 2014. <http://chinatradeextra.com/201404182468024/China-Trade-Extra-General/Daily-News/us-secures-pledges-on-data-transfers-pharmaceuticals-from-taiwan/menu-id-428.html>.

with these two countries constitutes a relatively small share of Taiwan's overall trade.⁶⁷ Singapore is Taiwan's fifth largest trading partner, with roughly 5 percent of total trade, and New Zealand is the 38th largest, with one-fifth of a percent of total trade.⁶⁸

Taiwan is in various stages of negotiating FTAs with Australia, Brunei, Chile, India, Indonesia, Israel, Japan, Malaysia, Paraguay, Peru, the Philippines, and Vietnam.⁶⁹ Taiwan already has conducted feasibility studies on the economic impact of proposed FTAs with India, Indonesia, and Malaysia.⁷⁰ Taiwan and the Philippines are currently in the process of conducting a similar study.⁷¹ Details about the status of the other negotiations are limited due in part to China's opposition to such agreements.⁷²

In April, Taiwan's then Economic Minister Chang Chia-juch said that many countries shelved their FTA negotiations with Taiwan for the rest of this year due to concern that Taiwan public opposition to the ratification of the CSSTA would similarly occur with any future negotiated FTA with Taiwan.⁷³ Although a potential factor, countries seem more concerned over China's opposition than that of the Taiwan public. In August, Chinese Ambassador to Malaysia Huang Huikang openly expressed China's opposition to a proposed Taiwan-Malaysia FTA, likely discouraging both Malaysia and other potential partners from upsetting one of their largest trading partners.⁷⁴ Former Indian Prime Minister P.V. Narasimha Rao highlighted this concern and said, "Establishing a relationship with Taiwan should not spoil our relationship with [China], which is far more important than [Taiwan] to the Indian establishment."⁷⁵

Beyond bilateral FTAs, Taiwan seeks to join the two major Asian regional trade agreements currently under negotiation, the Regional Comprehensive Economic Partnership (RCEP) and the Trans-Pacific Partnership (TPP).^{*} The RCEP[†] is a proposed free trade agreement between the Association of Southeast Asian Nations (ASEAN)[‡] and six other Asian countries[§] that would encompass over half of Taiwan's annual trade.⁷⁶ Taiwan has also expressed interest in joining the TPP as a way to counterbalance its economic dependence on mainland China. The TPP is a free trade agreement under negotiation among 12 countries that together purchase 32 percent of Taiwan's total exports.⁷⁷ Taiwan's government has made significant efforts to become a party to the negotiations by lobbying current participants and amending over 900 laws and regulations.⁷⁸ Mr. Rupert Hammond-Chambers, president of the

^{*}The countries negotiating the TPP are Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, the United States, and Vietnam. Alexander Bernard and Paul J. Leaf, "The U.S., TPP and Taiwan," *The National Interest*, April 24, 2014. <http://nationalinterest.org/feature/the-us-tpp-taiwan-10300>. "TPP Talks Made Progress, Barring Thorny Issues," *Jiji Press* (Japan), July 13, 2014. <http://the-japan-news.com/news/article/0001421519>.

[†]Launched in November 2012, the RCEP seeks to broadly liberalize trade in goods and services, encourage investment, establish a dispute settlement mechanism, and foster economic and technical cooperation. Rohit Sinha and Geethanjali Nataraj, "Regional Comprehensive Economic Partnership (RCEP): Issues and Way Forward," *Diplomat*, July 30, 2013. <http://thediplomat.com/2013/07/regional-comprehensive-economic-partnership-rcep-issues-and-way-forward/>.

[‡]ASEAN is composed of Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam. ASEAN, "ASEAN Member States." <http://www.asean.org/asean/asean-member-states>.

[§]Participants in the RCEP negotiations are ASEAN, Australia, China, India, Japan, New Zealand, and South Korea. Rohit Sinha and Geethanjali Nataraj, "Regional Comprehensive Economic Partnership (RCEP): Issues and Way Forward," *Diplomat*, July 30, 2013. <http://thediplomat.com/2013/07/regional-comprehensive-economic-partnership-rcep-issues-and-way-forward/>.

U.S.-Taiwan Business Council, highlighted President Ma's efforts in his testimony to the Commission. "We are seeing a degree of unilateral reform within Taiwan that frankly we haven't seen since the WTO [World Trade Organization] accession days in the 1990s," he said.⁷⁹

Cross-Strait Political Relations

The Sunflower Movement

Cross-Strait relations reached a potential turning point in 2014 as protesters occupied Taiwan's legislative chamber for 23 days in opposition to the CSSTA. The grassroots protest movement, later called the Sunflower Movement, ignited a public debate in Taiwan about the agreement, delayed its ratification, and temporarily postponed negotiations of other cross-Strait agreements. Looking ahead, the Taiwan public's concerns about the impact of cross-Strait relations on Taiwan's economy and political autonomy, as well as continued civic activism in Taiwan, could force the Taiwan and Chinese governments to change the way they have approached the relationship during the previous six years of cross-Strait rapprochement.⁸⁰

The Sunflower Movement was sparked when Kuomintang (KMT) legislator and convener of the Legislative Yuan's Internal Administration Committee Chang Ching-chung announced the CSSTA would be put to a vote—despite Taiwan's legislature having failed to conduct a review of the agreement, as the KMT and the Democratic Progressive Party (DPP), Taiwan's main opposition party, had previously agreed.⁸¹ Prior to this announcement, KMT and DPP legislators were locked in a dispute over the procedure for the review.⁸² Mr. Chang's announcement led protesters, mostly comprised of university students, to occupy the legislative chamber on the evening of March 18, 2014 and to remain there until April 10. During the occupation, on March 30, more than 100,000 people demonstrated outside Taiwan's presidential office.⁸³

The protesters asserted the Ma Administration negotiated the CSSTA in an opaque manner, failed to properly evaluate the impact on Taiwan's industries, and tried to force it through the legislature without a review. They expressed concerns the agreement will negatively impact Taiwan's small and medium-sized enterprises, hurt employment opportunities in Taiwan, and increase China's influence over Taiwan.⁸⁴ They also raised concerns regarding the potential for the agreement to open opportunities for large numbers of Chinese citizens to emigrate to Taiwan.⁸⁵ Although the DPP shared some of the Sunflower Movement's concerns about the CSSTA, the DPP did not organize the movement.⁸⁶

The Ma Administration argued Taiwan must ratify the agreement to increase its economic competitiveness and to avoid falling further behind South Korea in the number of FTAs it has signed. The Administration also warned that the dispute over the CSSTA will hurt Taiwan's credibility in trade negotiations with other countries.⁸⁷

The unease voiced by the Sunflower Movement represents broader public concern in Taiwan about cross-Strait relations and Taiwan's growing economic dependence on China.⁸⁸ The movement re-

flects a resurgence of civic activism in Taiwan. Over the previous two years, mass protests and other forms of activism by Taiwan civil society organizations occurred in response to a range of issues.⁸⁹ The leaders of the Sunflower Movement had been involved in several civil society organizations and social movements beginning in 2008.⁹⁰

The occupation of Taiwan's legislative chamber ended after legislative speaker Wang Jin-pyng, a member of the KMT, promised that the legislature would create an oversight mechanism for cross-strait agreements before Taiwan legislators meet to discuss the CSSTA.⁹¹ Taiwan's legislature has made little progress since then toward passing an oversight bill.

Following the end of the occupation of the legislative chamber, Taiwan and China postponed a meeting, originally scheduled for April 2014, during which the two sides had planned to continue negotiating a goods trade agreement.⁹² They also planned to discuss a dispute resolution mechanism and the establishment of representative offices, among other areas of cooperation.⁹³ The two sides resumed negotiations in September 2014.⁹⁴ However, even if other cross-strait agreements are signed, the legislature is unlikely to discuss their ratification until it passes a cross-strait oversight bill.

If enough time passes without the ratification of the CSSTA, Beijing may conclude cross-strait cooperation agreements are no longer meeting its objectives and pursue a more destabilizing, unilateral approach to Taiwan. However, for the time being, Beijing has chosen to increase its efforts to win "hearts and minds" in Taiwan. After the end of the occupation of Taiwan's legislative chamber, the Chinese government sought to present an image of openness, humility, and respect toward the needs and desires of the people of Taiwan and to focus on "the grassroots" of Taiwan society. President Xi's statements during his meeting in May 2014 with chairman of Taiwan's People First Party James Soong reflected Beijing's intent to show it is aware of and willing to address the ways in which cross-strait economic integration may not be benefiting certain groups in Taiwan.⁹⁵ During the visit to Taiwan in June 2014 by the director of the Taiwan Affairs Office (TAO)* Zhang Zhijun, the first ever visit to Taiwan by a TAO director, in addition to meeting with his counterpart Mainland Affairs Council (MAC)† Minister Wang Yu-chi, Director Zhang met with members of a Taiwan aboriginal group, religious leaders, farmers, and small businesses. He also met with students but not with the Sunflower Movement's student leaders, who had requested to meet with him.⁹⁶ Protesters gathered at several locations along Director Zhang's route. Moreover, due to confrontations between protesters and police, he canceled three events that he was to attend at the end of the visit.⁹⁷

During the trip, Director Zhang said, "We know that Taiwan people cherish very much the social system and the life style they have chosen. . . . We in mainland China respect what Taiwanese people have chosen."⁹⁸ While Director Zhang's statements in Taiwan were

*TAO is an agency within China's State Council that is responsible for overseeing China's cross-strait policies.

†MAC is a cabinet-level agency in Taiwan's executive branch that is responsible for overseeing Taiwan's cross-strait policies.

conciliatory, the Chinese government's actions and statements regarding Hong Kong, such as its 2014 white paper on the "one country, two systems" policy, undermine its efforts to create a favorable image for itself among the Taiwan public. Witnesses testified to the Commission that people in Taiwan closely follow developments in Hong Kong.⁹⁹ In August 2014, after the Chinese government announced its decision to rule out the open nomination of candidates for Hong Kong's chief executive, Wu Jieh-min, a researcher at Taiwan's Academia Sinica, said the decision "should serve as a red flag for Taiwan that Beijing could also break its promises to Taiwan no matter how rosy cross-strait ties appear right now."¹⁰⁰ In September 2014, the student association of Taiwan's National Tsing Hua University created an Internet-based petition to express support for university students in Hong Kong who organized a boycott of classes to protest the Chinese government's decision.¹⁰¹ Approximately a week later, protesters gathered in the lobby of the Hong Kong Economic, Trade, and Cultural Office in Taipei to express their opposition to the Hong Kong police's use of pepper spray and tear gas against protesters in Hong Kong and to voice their support for democracy in Hong Kong.¹⁰² Reflecting public sentiment, the Taipei Economic and Cultural Office in New York, Taiwan's New York representative office, in early October stated, "The protests [in Hong Kong] clearly show that the so-called 'one country, two systems' formula does not work and that Beijing has failed to keep its promises. We empathize with the people of Hong Kong and their demands for true democratic elections."¹⁰³ At the time of writing of this Report, the situation in Hong Kong continues to develop. (For more information about developments in Hong Kong and the connection between Hong Kong and Taiwan, see Chapter 3, Section 4, "Hong Kong.")

Negotiations and Meetings

Several weeks prior to the Sunflower Movement, Taiwan's semi-official Straits Exchange Foundation (SEF) and its Chinese counterpart, the Association for Relations Across the Taiwan Strait (ARATS),* signed two agreements on cooperation in the areas of earthquake monitoring and meteorology.¹⁰⁴ These agreements reflect a continuation of President Ma's focus on cross-Straits economic and other areas of cooperation rather than issues of sovereignty and security. President Ma has pursued this approach to cross-Straits relations since he was first elected in 2008 based on the Taiwan public's continued aversion to political talks due to its concern that such talks might move the sides closer to unification.

Furthermore, Taiwan and China reached a milestone in cross-Straits relations by holding the first formal talks between the heads of MAC and TAO since Taiwan and China split in 1949 following the Chinese civil war. At the meeting—held in February 2014 in

* SEF and ARATS facilitate cross-Straits negotiations in the absence of formal ties between the governments of Taiwan and China. Although SEF and ARATS are semiofficial organizations, they receive direction from their respective governments. Richard Bush, director of the Brookings Institution's Center for East Asia Policy Studies, explains, "Representatives of SEF and ARATS may open their joint meetings and then attend to preserve the fiction that these are not governmental interactions, but the individuals who are conducting the negotiations are officials from the relevant government agencies." Richard C. Bush, *Uncharted Strait: The Future of China-Taiwan Relations* (Washington, DC: The Brookings Institution Press, 2013), p. 59.

Nanjing, China—MAC Minister Wang and TAO Director Zhang agreed to create a mechanism that, according to Minister Wang, will allow direct communication between the heads of the agencies, their assistants, and their deputies.¹⁰⁵ Prior to the meeting, communication between the two agencies took place at the working level; however, top-level officials could not directly contact one another. According to a TAO spokesperson, during the meeting Director Zhang said he hopes the mechanism will “eliminate and reduce misjudgment, misunderstanding, and various kinds of interference.”¹⁰⁶

In addition to enhancing communication, Taiwan and China took an important step toward an agreement on opening representative offices on each side’s territory. One major point of disagreement concerned whether personnel from these offices will be able to visit their own citizens who have been detained by the other government. The Taiwan government insisted its representatives in China should have this right, but the Chinese government was initially reluctant to agree.¹⁰⁷ After the MAC–TAO meeting in Nanjing, during which the two sides discussed the issue but could not come to an agreement, Minister Wang explained that Beijing was concerned a Taiwan representative office would resemble a diplomatic facility in its functions.¹⁰⁸ However, China subsequently conceded to Taiwan on this point, and, in March 2014, Minister Wang announced that SEF and ARATS agreed that representative offices should have the right to conduct visits to their detained citizens.¹⁰⁹ The two sides are still negotiating a final agreement on representative offices.

In 2014, leaders of the Chinese Communist Party (CCP) continued to meet with Taiwan politicians from the pan-blue* coalition during these politicians’ visits to China. Prior to People First Party Chairman Soong’s visit to China, honorary chairman of the KMT Lien Chan also visited China and met with President and CCP General Secretary Xi. This inter-party dialogue has served as a forum for communication between Taiwan and China since Mr. Lien and Mr. Soong met with then President Hu Jintao in China in 2005. DPP legislators have criticized these exchanges for their lack of legislative oversight and for being outside of Taiwan’s democratic structure.¹¹⁰

Taiwan’s International Engagement

China’s insistence on the “one China principle” precludes any country or international organization from simultaneously recognizing China and Taiwan, thereby restricting Taiwan’s full participation in the international community. For example, Taiwan is unable to participate in the International Court of Justice, the International Maritime Organization, the World Intellectual Property Organization, the International Criminal Police Organization, and the International Atomic Energy Agency.¹¹¹ The Taiwan government also continues to be excluded from the United Nations Framework Convention on Climate Change.¹¹² A joint study by the World Bank and Columbia University found that “Taiwan may be the place on Earth most vulnerable to natural hazards.”¹¹³

*The pan-blue coalition refers to the KMT, the People First Party, and the New Party.

Nevertheless, Taiwan pursues greater international space by maintaining its official diplomatic relations with 22 countries,* expanding its participation in international organizations through creative diplomacy, and strengthening economic partnerships with countries other than China.

The U.S. government supports Taiwan's efforts to expand its international engagement and has played a key role in Taiwan's entry into or retaining of a seat in international organizations, including the Asia Pacific Economic Cooperation forum, the World Trade Organization, and the Asian Development Bank.¹¹⁴ In October 2013, Deputy Assistant Secretary of State Kin Moy said that "with [U.S.] support, Taiwan has participated as an observer in the World Health Organization, or 'WHO,' Assembly for four consecutive years."¹¹⁵ In 2014, Taiwan was invited again to participate as an observer in the World Health Assembly.¹¹⁶

In 2008, China and Taiwan reached a tacit understanding—or what President Ma unilaterally declared to be a "diplomatic truce"—to stop poaching each other's diplomatic partners in order to maintain positive momentum in the cross-Strait relationship.¹¹⁷ The truce appears to still be in place despite The Gambia's severing of diplomatic relations with Taiwan in November 2013. Beijing has not established diplomatic ties with The Gambia since the decision, and no public evidence exists to suggest China enticed or pressured the West African country to break diplomatic relations with Taiwan. Taiwan's Foreign Minister stated that The Gambia's decision was related to Taiwan's refusal to grant the country additional financial aid that it had requested.¹¹⁸ The Gambian president may have mistakenly calculated China would establish diplomatic relations with The Gambia after it split with Taiwan or that China would provide The Gambia with aid or other benefits exceeding what Taiwan provided, even without diplomatic relations. Such a calculation could explain the president's willingness to cut ties with a country which former Gambian Foreign Minister Sidi Sanneh described on his blog as the president's "most important diplomatic partner."¹¹⁹

The cross-Strait diplomatic truce has enabled Taiwan to retain most of its diplomatic partners during President Ma's tenure. However, should cross-Strait relations sour, Taiwan may find it difficult to maintain some of these relationships. According to Zhang Zhexin, a research fellow at the Shanghai Institute for International Studies, Beijing has rejected overtures from at least five countries with diplomatic relations with Taiwan since President Ma's election in 2008. Moreover, the lack of diplomatic relations with these countries has not prevented them from engaging in extensive business activity with China, including Chinese companies exploring investment projects in Nicaragua and Honduras.¹²⁰ Some of their governments also are increasing contact with the Chinese government. For example, in November 2013, the government of São Tomé and Príncipe and the Chinese government agreed to

*The following countries have official diplomatic relations with Taiwan: Belize, Burkina Faso, the Dominican Republic, El Salvador, Guatemala, Haiti, the Holy See, Honduras, Kiribati, the Marshall Islands, Nauru, Nicaragua, Palau, Panama, Paraguay, Saint Christopher and Nevis, Saint Lucia, Saint Vincent and the Grenadines, São Tomé and Príncipe, Solomon Islands, Swaziland, and Tuvalu.

open a Chinese trade office in the Central African country. Then, in June 2014, the president of São Tomé and Príncipe visited China in what he said was an effort to seek investment in a deep-water harbor and to support his country's economic development.¹²¹

Taiwan Military and Security Issues

Cross-Strait Military Balance

Although relations between the governments of Taiwan and China have improved dramatically since 2008, China's military modernization continues to focus on improving its ability to conduct military operations against Taiwan and to deter, delay, and deny any U.S. intervention in a cross-Strait conflict. Over the last decade, the balance of military power across the Taiwan Strait has shifted. China's military now appears to possess an increasing advantage over Taiwan's military. Moreover, the increased range and capabilities of China's power projection platforms have largely negated Taiwan's historic geographic advantages in a cross-Strait conflict.

In contrast to this assessment, Ian Easton, research fellow at the Project 2049 Institute, testified to the Commission that there has not been "a fundamental shift in the cross-Strait military balance. Rather, the situation remains fluid and dynamic."¹²² He explained internal PLA documents and technical studies indicate the PLA believes it is unable to gain air superiority over Taiwan with its current precision strike capabilities. In addition, he asserted Taiwan so far has countered the PLA's strike capabilities with targeted investments in missile defense and radars, infrastructure hardening, rapid runway repair capabilities, and military training. Many of Taiwan's improvements in these areas have been supported or enabled by the United States.¹²³

Notwithstanding pessimistic PLA assessments of China's capabilities and areas of excellence within the Taiwan military, the Commission assesses the expanding number and increasing effectiveness of China's military assets points to an increasing military advantage for China over Taiwan. China currently has approximately 2,100 combat aircraft and 280 naval ships available for a Taiwan conflict, as well as overlapping air and missile defense coverage over most of Taiwan. About 600 of China's combat aircraft and 90 of China's submarines and surface ships are modern. China continues to expand its fleet of modern platforms rapidly while regularly upgrading legacy platforms with new weapon systems as they become available. By comparison, Taiwan has approximately 410 combat aircraft and 90 naval combatants.¹²⁴ Fewer than 330 of Taiwan's combat aircraft and about 25 of Taiwan's surface ships are modern.¹²⁵ Taiwan has not acquired a modern combat aircraft or naval combatant since the mid-2000s. For a definition of modern combat aircraft and naval combatants, see Chapter 2, Section 2, "China's Military Modernization."

Moreover, China's vast arsenal of short-range ballistic missiles and cruise missiles would provide it with a crucial advantage in a conflict with Taiwan. William Murray, associate research professor at the U.S. Naval War College, testified to the Commission that a Chinese short-range ballistic missile attack on Taiwan's air bases

likely would render the runways temporarily unusable and prevent the Taiwan Air Force from taking off during the early hours of a conflict. Follow-on short-range ballistic missile and cruise missile attacks then could destroy aircraft that were stuck on the runways. In addition, a surprise short-range ballistic missile attack on Taiwan's naval ports while ships were still moored could destroy many of the Taiwan Navy's destroyers and frigates. Those Taiwan surface combatants already at sea during the attack then would be vulnerable to strikes by China's large number of sea-, air-, and land-based antiship cruise missiles.¹²⁶ Furthermore, short-range ballistic missile and cruise missile strikes against Taiwan's command and control infrastructure would hamper the Taiwan military's ability to coordinate its response to a PLA attack.¹²⁷

Mr. Murray testified about the challenge Taiwan faces in defending against China's short-range ballistic missiles. He said:

*In 2002 China had 350 [short-range ballistic missiles] with an estimated accuracy, or Circular Error Probable (CEP), of approximately 300 meters. By 2012, China had over 1,100 missiles deployed to units opposite Taiwan, with CEPs on the order of 20 meters. This level of accuracy, increased inventory, and the targeting flexibility provided by multiple types of warheads means that [short-range ballistic missiles] now provide China new options against Taiwan.*¹²⁸

Mr. Murray added that Taiwan's Patriot missile defense systems are costly and "will likely stop no more than 323 of the ... short-range ballistic missiles China could fire. This arms race between Chinese [short-range ballistic missiles] and Taiwan's Patriot interceptors is thus one Taiwan cannot win, and cannot afford to continue."¹²⁹

Beyond their utility during a cross-Strait conflict, China's large and diverse inventory of short-range ballistic missiles also provides China with "significant psychological coercive value," according to Mark Stokes, executive director of the Project 2049 Institute.¹³⁰ Mr. Stokes testified to the Commission in 2010 that "every citizen of Taiwan lives within seven minutes of destruction, and they know that."¹³¹

A combination of factors has led to the shift in the cross-Strait balance of power, including China's large defense budget and annual increases in defense spending for more than 20 years, Taiwan's smaller defense budget and decreases in defense spending, and Taiwan's limited ability to acquire platforms and weapon systems on the global market.

- Cross-Strait defense spending trends since 2001 have dramatically shifted in China's favor. The officially reported budget gap between Taiwan and China in 2014 totaled more than \$120 billion.¹³² For more information on China's defense spending, see Chapter 2, Section 2, "China's Military Modernization."
- Taiwan's defense budget as a percentage of GDP has decreased from 3.8 percent in 1994 to 2 percent in 2014.¹³³ This decline is due largely to political gridlock in Taiwan and competing

budget priorities. Furthermore, President Ma during the first six years of his tenure has had little incentive to increase the defense budget. Improved cross-Strait relations have reduced the Taiwan public's perceptions of the threat posed by China to Taiwan,¹³⁴ and domestic and social welfare issues have become more salient as Taiwan's economy attempts to recover from the global financial crisis and its workforce ages.

- Taiwan does not have the expertise and experience to design and produce certain weapon systems, and in many cases it has been unable to procure these systems from other countries. Aside from the United States, no country has been willing to sell major platforms and weapon systems to Taiwan since the early 1990s due to pressure from the Chinese government.¹³⁵

Keenly aware of the threat posed by China's military modernization, Taiwan is attempting to expand and upgrade its military capabilities with a combination of domestic production and acquisition from the United States. Major domestic programs under development or recently completed include the following:

- *Air-to-Ground Cruise Missiles:* In January 2014, the Taiwan Air Force introduced a new domestically-produced air-to-ground cruise missile, called the Wan Chien. Taiwan has already upgraded over half of its Indigenous Defense Fighters to be capable of carrying the missile. In a cross-Strait military conflict, Taiwan could use the Wan Chien to attack military targets on China, including runways, missile bases, and radar installations.¹³⁶
- *Antiship Cruise Missiles:* In February 2014, Taiwan media reported the country will begin to produce a supersonic long-range antiship cruise missile that eventually will be deployed to land-based mobile launchers along Taiwan's coast.¹³⁷ The new missile will complement Taiwan's existing land-based fixed and mobile antiship cruise missile units, which are equipped with an earlier version of the missile, as well as Taiwan's extensive inventory of sea-based antiship cruise missiles. The land-based variant of the missile will be more survivable and lethal than its naval predecessor, providing Taiwan military commanders with increased operational flexibility and enhancing Taiwan's ability to target the PLA's amphibious ships during a Chinese invasion of Taiwan.¹³⁸
- *Missile Corvette:* In March 2014, the Taiwan Navy received the first ship in a new class of catamaran-style missile corvette from Taiwan's Lung Teh Shipbuilding Company.¹³⁹ Taiwan may build as many as 12 of these ships.¹⁴⁰ The new corvette has better range, endurance, and sea-keeping ability than Taiwan's current patrol ships, and it will be armed with long-range antiship cruise missiles. The ship will provide the Taiwan Navy with greater survivability, due to the ship's stealth features, and lethality in a potential cross-Strait conflict as well as increase the Taiwan Navy's ability to patrol the East and South China seas.¹⁴¹

- *Unmanned Aerial Vehicles (UAVs)*: Taiwan is said to be developing its first UAV capable of carrying munitions. This UAV also will have stealth capability, according to a Taiwan official.¹⁴² The Taiwan Army already has 32 UAVs designed for intelligence, surveillance, and reconnaissance (ISR) missions that are based on Taiwan's southeastern coast. Taiwan reportedly is considering establishing a second UAV base in southwestern Taiwan.¹⁴³

Select military equipment Taiwan is acquiring or pursuing from the United States includes the following:

- *P-3C Orion Maritime Patrol Aircraft*: In late 2013, Taiwan received the first four of 12 P-3C Orion maritime patrol aircraft that it agreed to purchase from the United States in 2007. Taiwan is scheduled to receive five more in 2014 and the remaining aircraft in 2015.¹⁴⁴ Taiwan incorporated the P-3C into the command post and field training portions of the 2014 Han Kuang military exercise.¹⁴⁵ The aircraft will supplement and ultimately replace Taiwan's aging S-2T maritime patrol aircraft. The P-3C will increase the capability and endurance of the military's fixed-wing maritime patrol aircraft force, improving Taiwan's ability to perform antisubmarine warfare and ISR.
- *Apache Attack Helicopters*: In November 2013, Taiwan received the first six of 30 AH-64E Apache helicopters that it agreed to purchase from the United States in 2010.¹⁴⁶ As of September 2014, Taiwan had received 18 more helicopters, with the six remaining helicopters scheduled to be delivered by the end of 2014.¹⁴⁷ These helicopters are armed with a chain gun and can also carry air-to-air or air-to-ground missiles or rockets.¹⁴⁸ Taiwan likely would use these helicopters to counter a PLA invasion force that was approaching or had already landed on Taiwan territory.¹⁴⁹
- *Fighters*: In October 2012, the United States awarded Lockheed Martin a \$1.85 billion contract to begin performing a mid-life upgrade on Taiwan's existing fleet of 145 F-16 A/B fighter aircraft. The upgrades are scheduled to occur from 2017 to 2021 in groups of about 24 aircraft.¹⁵⁰ In March 2014, the U.S. Air Force cancelled the budget for the Combat Avionics Programmed Extension Suite upgrade for 300 of its own F-16 fighters in the Department of Defense's (DoD's) 2015 budget request.* Although Taiwan and the United States apparently plan to move forward with the mid-life upgrade program, the cost of upgrading each Taiwan F-16 almost certainly will increase without cost sharing with the U.S. Air Force.¹⁵¹ Even with the scheduled upgrade to Taiwan's F-16 A/Bs, in August 2014, the deputy director general of the Department of Strategic Planning in Taiwan's Ministry of National Defense indi-

*As of October 2014, Congress has not yet passed a National Defense Authorization Act for Fiscal Year 2015. To date, the National Defense Authorization Act for Fiscal Year 2015 (H.R. 4435) passed by the U.S. House of Representatives would require the Secretary of the Air Force to provide a report to the House and Senate Armed Services Committees on the effects of canceling the Combat Avionics Programmed Extension Suite program.

cated Taiwan is still considering procuring F-16 C/Ds from the United States.¹⁵²

- *OLIVER HAZARD PERRY-Class Guided-Missile Frigates:* In April 2014, the U.S. House of Representatives passed H.R. 3470, a bill authorizing the sale of four decommissioned and unarmed PERRY-class frigates to Taiwan. Taiwan subsequently announced it would only purchase two of the ships if they are made available, due in part to budget constraints.¹⁵³ After being fitted with Taiwan weapon systems, these two ships would supplement the eight PERRY-class frigates already serving in the Taiwan Navy and help to offset the planned retirement over the next few years of Taiwan's eight KNOX-class frigates, which specialize in antisubmarine warfare.¹⁵⁴ While the U.S. Senate has yet to consider H.R. 3470, in November 2013, the Senate Foreign Relations Committee did approve S. 1683, a related bill that awaits consideration on the Senate floor.¹⁵⁵
- *Submarines:* In 2001, the United States approved Taiwan's request to purchase diesel-electric submarines via the foreign military sales process. However, the sale has stalled for a number of reasons on both sides. These include partisan political gridlock in Taiwan's legislature, delays in Taiwan's commitment of funds, and disagreements between Washington and Taipei over costs. Furthermore, the United States has not built a diesel-electric submarine since the 1950s or operated one since 1990. In late 2014, the Taiwan media reported the Taiwan Ministry of Defense has decided to pursue an indigenous submarine program. The ministry's spokesperson said Taiwan would prefer to procure new U.S. submarines but due to the stalling of the procurement process Taiwan will "pursue both foreign procurement and domestic building plans in tandem." He added, "We welcome the US and other free, democratic countries to collaborate with us to advance our indigenous submarine-building program."¹⁵⁶ The U.S. government has not said whether it will authorize the transfer of technology to an indigenous submarine program in Taiwan. Taiwan's current fleet of four submarines includes two former U.S. boats that were built in the 1940s and transferred to Taiwan in the 1970s.

Taiwan Defense Policy and Reform

As explained to the Commission by Mr. Easton, "even more important than advanced weapons are the investments Taiwan is making into high quality military personnel."¹⁵⁷ Taiwan originally planned to complete its transition to an all-volunteer force by the end of 2014, but due to low recruitment rates it pushed the completion date to 2017.¹⁵⁸ In addition to recruitment challenges, the establishment of an all-volunteer force has been more expensive than expected, and Taiwan has had to divert funds from other portions of the defense budget, including operations and investments, to ease the rising personnel costs.¹⁵⁹ Taiwan also has sought to offset some of the rising costs resulting from the recruitment and reten-

tion of an all-volunteer force by downsizing its active duty force. Taiwan aims to shrink the active duty force from 275,000 to 215,000 troops by the end of 2014¹⁶⁰ and to as few as 170,000 troops by 2019.¹⁶¹

Moreover, the all-volunteer force transition could adversely impact Taiwan's reserve force, which presently consists of over 2.6 million personnel and is tasked to help defend against a PLA invasion and to support disaster relief efforts.¹⁶² Previously, Taiwan conscripts performed one year of active duty service before becoming reservists. Under current Taiwan law, men born after 1994 are required to undergo four months of active-duty service, a length of time that critics assert is inadequate to prepare them to be effective soldiers.¹⁶³ At the end of four months, the conscripts enter Taiwan's reserve system. Reservists participate in military training every two years and in military exercises every year.¹⁶⁴

Taiwan Military Training and Activities

The Taiwan military routinely conducts a range of exercises to maintain combat readiness; test and improve its capabilities and war plans; integrate new weapons systems; and demonstrate to the Taiwan public, China, and the United States that it has a credible deterrent capability. In some exercises, Taiwan also seeks to assert its territorial claims and demonstrate freedom of navigation. Major Taiwan military exercises and activities in late 2013 and 2014 included the following:

- *Humanitarian Assistance/Disaster Relief to the Philippines:* In November 2013, the Taiwan military provided humanitarian assistance/disaster relief to the Philippines following Typhoon Haiyan. Taiwan Air Force C-130 cargo aircraft and a Taiwan Navy amphibious ship delivered relief supplies and equipment to the Philippines. This marked the first visit by a Taiwan Navy ship to the Philippines in 10 years.¹⁶⁵ The relief supplies and equipment which the Taiwan military transported to the Philippines were donated by Taiwan nongovernmental organizations and were valued at approximately \$8.25 million.*¹⁶⁶
- *ADIZ Exercise:* In February 2014, Taiwan's Coast Guard, Navy, and Air Force carried out combined drills and patrols in the area of the East China Sea where its Air Defense Identification Zone (ADIZ) overlaps with the ADIZ announced by China in November 2013. (For a discussion of the ADIZ, see Chapter 2, Section 1, "Year in Review: Security and Foreign Affairs.") According to official Taiwan press, the exercise demonstrated that "Taiwan is pursuing its own national interests despite China's announcement . . . of a new ADIZ that heightened tensions in the region." Exercise participants included

*The Taiwan government made a monetary donation of \$921,000 to relief efforts. The Chinese government donated \$100,000 in cash and \$1.4 million worth of relief supplies. Ministry of Foreign Affairs (Taiwan), "Love and Empathy Transcend Boundaries: Relief Aid Extended by the Republic of China to the Philippines in Wake of Typhoon Haiyan." <http://www.mofa.gov.tw/Upload/WebArchive/1304/8cdc1037-5708-4eb2-8f82-c33d8c006c6f.PDF>; Jane Perlez, "China Increases Aid to Philippines," *New York Times*, November 14, 2013. http://www.nytimes.com/2013/11/15/world/asia/chinese-aid-to-philippines.html?_r=0.

two coast guard vessels, two navy frigates, an antisubmarine aircraft, a helicopter, and two fighter aircraft.¹⁶⁷

- *South China Sea Landing Exercise*: In April 2014, the Taiwan Navy and Marine Corps conducted an amphibious landing to re-take control of Itu Aba (also known as Taiping Island),* an island in the Spratly Islands (see Figure 4), from a notional enemy force in the Taiwan military's largest exercise in the South China Sea since 2000. Exercise participants included two marine companies, 20 amphibious assault vehicles, and multiple advanced frigates, amphibious ships, and coast guard personnel.¹⁶⁸ In addition to increasing the number of its military exercises in the South China Sea, Taiwan is upgrading its military and civilian infrastructure on Taiwan-controlled islands in the region. Taiwan is expanding the wharf on Itu Aba, currently only capable of accommodating small ships, to enable larger ships to dock there. Taiwan also is renovating the island's runway, including upgrading its drainage system and lights. These projects are expected to be completed by the end of 2015.¹⁶⁹

*Taiwan and China have almost identical claims in the South China Sea. Both Taiwan and China claim to have historic and legal rights in the South China Sea and they illustrate their claims with the nine-dash line. (For further discussion of China's sovereignty claims, see Chapter 3, Section 1, "China and Asia's Evolving Security Architecture.") According to Taiwan academics, in recent years, unnamed U.S. officials have expressed concern that Taiwan and China might cooperate on the issue of territorial disputes in the South China Sea. Although, on several occasions, the Chinese government has proposed that Taiwan and China cooperate on this issue, the Taiwan government has refused to cooperate with China. Chou Yi-ling and Maia Huang, "MAC Sees No Room for Cross-Strait Cooperation on Territorial Issues," Central News Agency (Taiwan), May 15, 2014. <http://focustaiwan.tw/news/acs/201405150040.aspx>; J. Michael Cole, "Taiwan-China Ties in South China Sea Concern US," *Taipei Times*, June 6, 2012. <http://www.taipetimes.com/News/front/archives/2012/06/06/2003534621>; and Peter Dutton, "Three Disputes and Three Objectives: China and the South China Sea," *Naval War College Review* 64:4 (Autumn 2011): 44–45.

Figure 4: South China Sea



Source: New York Times, "Territorial Claims in South China Sea." <http://www.nytimes.com/interactive/2012/05/31/world/asia/Territorial-Claims-in-South-China-Sea.html>. Adapted by the U.S.-China Economic and Security Review Commission. Locations of various features are not exact.

- *Han Kuang*: In May 2014, the Taiwan military held the command post component of its annual Han Kuang exercise, Taiwan's only national-level joint exercise. This year's command post exercise focused on defending against a simulated PLA full-scale invasion of Taiwan that included attacks against Taiwan's east coast launched from China's new aircraft carrier, the *Liaoning*. Taiwan conducted the field training component of Han Kuang in September.¹⁷⁰ According to Taiwan officials, the exercise included Taiwan's largest maritime live-fire drill in 10 years.¹⁷¹ Typically, a team of around 50 U.S. military personnel observes the Han Kuang exercise from various sites throughout Taiwan. The observation teams include senior retired military officers, mid-level active duty or reserve officers, mid-level civilian analysts, and contractors.¹⁷²
- *Response to PLA Flights through Taiwan's ADIZ*: On August 25, 2014, the Taiwan Air Force deployed fighter aircraft to follow PLA surveillance aircraft that entered Taiwan's ADIZ multiple times on their flights to and from the South China Sea. These are highly unusual actions for PLA aircraft, which historically have avoided flying through Taiwan's ADIZ.¹⁷³ According to J. Michael Cole, editor-in-chief of *Thinking Taiwan*,

PLA aircraft may have entered Taiwan's ADIZ to "to gauge Taiwan's surveillance capabilities and response mechanism. Chinese electronic surveillance aircraft last year committed similar intrusions near Okinawa and close to the disputed Senkaku/Diaoyu islets in the East China Sea to—it is speculated—evaluate Tokyo's ability to respond (Japan's response was to scramble F-15 aircraft). Soon thereafter, China declared its controversial ADIZ over the East China Sea. Some analysts believe that China is drawing up plans to establish an ADIZ in the South China Sea, though Beijing has yet to give any concrete indication that it intends to do so."¹⁷⁴

Computer Network Defense

In addition to China's conventional military forces, China's computer network operation capabilities also pose a major threat to Taiwan. According to the Taiwan Ministry of National Defense's 2013 *National Defense Report*, "Once a conflict arises, these operations will enable [China] to cripple our command, control and logistics network, which will affect the normal operation of the [Taiwan] Armed Forces' information systems, and delay its contingency response time."¹⁷⁵

To address the cyber threat from China, the Taiwan military is attempting to enhance information security awareness through increased education, inspections, and exercises. It also plans to bolster the cyber defense of its command, control, communications, and information platforms.¹⁷⁶ These measures supplement the steps Taiwan has taken in recent years in this area, which include increasing spending on cyberwarfare capabilities, establishing an additional cyberwarfare unit within the Ministry of National Defense, and building a facility for cyber defense training against simulated attacks on critical infrastructure.¹⁷⁷

Cross-Strait Espionage

The counterintelligence risks to Taiwan and U.S. military information and equipment in Taiwan are increasing as cross-Strait ties expand and Chinese citizens visit Taiwan in greater numbers. China now has greater access to Taiwan and better opportunities to conduct intelligence operations against Taiwan citizens both in Taiwan and China. In 2013, nearly three million Chinese tourists visited Taiwan, up from around 300,000 in 2008.¹⁷⁸

In the last two years, Taiwan has arrested at least eight former or active military officers, including one flag officer, for suspected espionage.¹⁷⁹ In April 2014, a former Taiwan Air Force major was found guilty and sentenced to 20 years in prison for providing the Chinese government with classified information related to Taiwan's E-2K airborne early warning aircraft, a U.S. system which Northrop Grumman first delivered to Taiwan in 2005.¹⁸⁰ In addition to gathering strategic, operational, tactical, and technical intelligence, these activities are intended to demoralize the Taiwan military and public and increase concerns in the U.S. government and military about the security of defense information and technology provided to Taiwan.

The Taiwan military is implementing measures to counter Chinese intelligence activities. These measures include enhancing security at military bases, heightening awareness among the military of espionage threats, and requiring some military personnel to take more polygraph tests.¹⁸¹ For example, in 2012 the Taiwan Ministry of National Defense instituted a policy to require ministry personnel posted overseas, including attachés and procurement officials, to return to Taiwan once a year for a polygraph test.¹⁸²

The counterintelligence threat to Taiwan is not limited to military personnel; it also extends to civilian researchers. In 2014, Chinese and Taiwan media reported Chen Kun-shan, the former director of the Center for Space and Remote Sensing Research at Taiwan's National Central University and a top expert on remote sensing technology, had defected to China and taken a position with the State Key Laboratory of Remote Sensing Science at Beijing Normal University.¹⁸³ Taiwan media reported that an anonymous source within Taiwan's intelligence community said Dr. Chen's former position would have given him access to classified information about the Taiwan military and Taiwan's methods for analyzing intelligence about China.¹⁸⁴ He also would have been familiar with Taiwan's remote sensing technology. In China, Dr. Chen may contribute to Chinese research projects that have applications for the PLA.¹⁸⁵

Although U.S. media reporting tends to focus on China's intelligence successes against Taiwan, Mr. Easton testified that Taiwan has an impressive track record of espionage against China:

*Since 2004, China has suffered from dozens of Taiwanese espionage cases. Taiwan's agents have included the leadership of China's Air Force Command Academy, a Central Committee member, and more. Recent examples of success include Taiwan's ability to collect detailed information on China's anti-ship ballistic missiles, drones, and airbases. Taiwan also obtained timely forewarning of China's intention to declare an air defense identification zone over the East China Sea in November 2013. This allowed the [Taiwan] National Security Council to call an emergency meeting and deliberate in advance of Beijing's declaration.*¹⁸⁶

U.S.-Taiwan Relations

Developments in U.S.-Taiwan Political Relations

April 10, 2014 marked the 35th anniversary of the passage of the Taiwan Relations Act. Leading up to the anniversary, U.S. and Taiwan government officials praised the state of bilateral relations, saying the relationship is the strongest it has been in over three decades.¹⁸⁷ U.S. Environmental Protection Agency Administrator Gina McCarthy's visit to Taiwan in April, the first by a Cabinet-level official since June 2000, reflects this positive momentum in U.S.-Taiwan relations.¹⁸⁸ In a speech at National Taiwan University, she spoke about U.S.-Taiwan collaboration and Taiwan's leadership on environmental issues.¹⁸⁹ The U.S. and Taiwan governments have co-hosted meetings involving participants from around the world on topics such as port sustainability, electronic waste,

and environmental information.¹⁹⁰ U.S. cabinet-level visits to Taiwan help to strengthen ties between high-level U.S. and Taiwan officials, reinforce the bilateral partnership, and express U.S. support to Taiwan.*

Although the relationship has recovered from a period of heightened tension and weakened trust from 2002 to 2008, some analysts point out there is still much room for improvement.¹⁹¹ Mr. Hammond-Chambers, in his testimony to the Commission, described the relationship as “adrift” and “underwhelming” due to the lack of “significant goals and objectives.”¹⁹² Mr. Hammond-Chambers and Vincent Wei-cheng Wang, professor at the University of Richmond, testified that the U.S. government probably has been complacent regarding Taiwan because it assumes the warming of cross-Strait relations and greater economic engagement will lead to lasting peace in the Taiwan Strait.¹⁹³ Dr. Wang cautioned that even though the United States and Taiwan “share common values, commercial interests and [a] historical relationship,” the two sides must constantly “cultivate and manage” the relationship.¹⁹⁴

Developments in U.S.-Taiwan Military and Security Relations

Taiwan continues to be one of the largest buyers of U.S. arms in the world. From 2008 to 2011, Taiwan agreed to purchase approximately \$18.3 billion of U.S. arms.¹⁹⁵ However, the U.S. government has not authorized a major arms sale to Taiwan since 2011,† leading some analysts to question whether the United States is doing enough to make defense articles available to Taiwan. Randall Shriver, president and chief executive officer of the Project 2049 Institute, testified to Congress that “[the Obama Administration] needs bolder and more visible measures to fulfill U.S. obligations to Taiwan consistent with notification requirements under the Arms Export Control Act.”¹⁹⁶

David Firestein, vice president for the Strategic Trust-Building Initiative at the EastWest Institute, testified to the Commission that U.S. policy toward Taiwan is falling short of its goal of enhancing Taiwan’s security. He said:

*It is fair to say that U.S. policies, as implemented, do not seem to be able to keep pace with events in the region, particularly the rapid and well-documented development of China’s military capabilities. To put it in simple terms, the United States is selling arms to Taiwan at an arithmetic pace, while China’s military capabilities are developing at something closer to a geometric trajectory. On these terms, this is a game that the United States and Taiwan cannot win.*¹⁹⁷

* Administrator McCarthy was originally scheduled to visit Taiwan, in addition to China, in December 2013, but she postponed the Taiwan portion of her trip for unknown reasons. Shirley Kan and Wayne Morrison, *U.S.-Taiwan Relationship: Overview of Policy Issues* (Congressional Research Service, April 22, 2014), p. 16.

† The executive branch is only required to notify Congress of arms sales through the foreign military sales process that meet or exceed the following values: \$14 million in major defense equipment, \$50 million in defense articles or services, and \$200 million in design and construction services. Thus, there may have been U.S. arms sales to Taiwan that did not exceed these amounts since 2011. Piin-Fen Kok and David J. Firestein, *Threading the Needle: Proposals for U.S. and Chinese Actions on Arms Sales to Taiwan* (EastWest Institute, September 2013), p. 71. http://www.ewi.info/sites/default/files/TAS%20Final%20%2528ISSUU%20VERSION%209_17_2013%2529.

Mr. Firestein also explained that the U.S. executive branch's practice of "bundling" announcements of arms sales to Taiwan creates misperceptions of U.S. policy that could affect U.S. diplomatic efforts. He offered that, "By issuing more frequent, but smaller-scale, notifications, the United States can perhaps mitigate some of the public diplomacy problem without affecting the content of the sales at all. . . . This approach might also sensitize the Chinese—including the Chinese public—to the sales to a greater degree than is the case now with less frequent, larger notifications."¹⁹⁸

In addition to U.S. arms sales to Taiwan, U.S. training and consultations are a key component of the bilateral security relationship. For example, the U.S. provides training to Taiwan fighter pilots, special operations personnel, and rapid runway repair personnel. Furthermore, members of Taiwan's military study at U.S. military educational institutions.¹⁹⁹

In an important development, military-to-military contact increased in 2013. In 2013, DoD personnel conducted more than 2,000 visits to Taiwan, compared to approximately 1,500 visits in 2012.*²⁰⁰ Nevertheless the U.S. practice of limiting the highest rank of U.S. military personnel who can visit Taiwan to colonels and captains (O6-level) prevents the most senior U.S. officers from gaining firsthand knowledge of the Taiwan military and the operational environment in a potential cross-Strait conflict. Mr. Easton explained to the Commission:

*Our most difficult operational plan calls for the U.S. military to fight shoulder-to-shoulder with Taiwan's military. How can the President of the United States, this or any future president, be assured that we could seamlessly do that if we don't allow our military leaders to go out and see the battlespace firsthand? If you've not been out to the offshore islands, Kinmen, Matsu, Tungyin, Penghus, if you've not seen the 18 invasion beaches on Taiwan's west coast, and if you don't have that personal relationship, I think that's a mistake.*²⁰¹

Role of Taiwan in U.S. Rebalance to Asia

The Obama Administration recognized the importance of the Asia Pacific when it committed to "rebalance" U.S. government attention and resources to the region in 2011. The strategy intends to strengthen U.S. economic, diplomatic, and security relations throughout the Asia Pacific, both bilaterally and multilaterally, with a "whole-of-government" approach to policy implementation. However, some analysts have suggested the Obama Administration has not adequately incorporated Taiwan into the U.S. rebalance to Asia policy, pointing to several important speeches and documents about the rebalance by then Secretary of State Clinton, President Obama, and then National Security Advisor Thomas Donilon.[†]²⁰²

* DoD personnel conducted nine exchanges with Chinese military personnel in China in 2013. The total number of DoD personnel who participated in these exchanges is unavailable. U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2014*, June 5, 2014, p. 71.

† However, in a November 2011 speech about the rebalance to Asia policy, then Secretary of State Clinton spoke about Taiwan and cross-Strait relations. She said, "We have a strong relationship with Taiwan, an important security and economic partner, and we applaud the progress that we have seen in cross-Strait relations between China and Taiwan during the past three

The Administration may feel constrained in addressing Taiwan's role in the rebalance policy, particularly regarding military cooperation, by the unofficial nature of U.S.-Taiwan relations and concerns about the impact of openly including Taiwan in the rebalance policy on U.S.-China relations.

According to some analysts, Taiwan could play an important role in the U.S. rebalance to Asia given its geographic position, relatively advanced military capabilities, large and vibrant economy, and robust democracy.²⁰³

In the military realm, Taiwan's strengths in ISR could support U.S. efforts to promote security and stability in the Asia Pacific. Mr. Stokes and Russell Hsiao, non-resident senior fellow at the Project 2049 Institute, explain:

Taiwan is uniquely positioned to contribute to regional situational awareness of the air, space, sea and cyber domains. Peacetime air surveillance data can be fused with other sources of information to better understand PLA Air Force tactics and doctrine. Long range [ultra high frequency] early warning radar data could fill a gap in regional space surveillance. The Taiwanese Navy has a firm grasp of the unique undersea geography and hydrological environment of the Western Pacific Ocean. . . . Taiwan's geographic position and willingness to contribute to a regional common operational picture, including maritime domain awareness, air surveillance, and space surveillance and tracking, could be of significant value for both disaster response and military purposes.²⁰⁴

Taiwan and the U.S. military also could cooperate on surveillance for missile defense. In May 2014, Representative Randy Forbes added a provision to the House National Defense Authorization Act for Fiscal Year 2015 requiring the U.S. Missile Defense Agency to evaluate the potential for linking Taiwan's highly advanced early warning radar to U.S. sensor and missile defense systems.²⁰⁵

Beyond sharing technical ISR data, the U.S. government could learn from Taiwan's unique insights into China, the PLA, and Chinese cyber operations. As Mr. Easton points out, Taiwan has a "long history of leveraging its close cultural, linguistic, and economic ties to China for collecting traditional human intelligence" and Taiwan's research centers possess "unique expertise and historical experiences—as well as unparalleled access to data."²⁰⁶

In the area of China's cyber operations, Taiwan's cybersecurity experts possess in-depth knowledge of Chinese cyber tactics, techniques, and procedures. For more than a decade, Taiwan's information networks have been a major target for Chinese hackers. These hackers have tried new tactics, techniques, and procedures on Taiwan's networks before using them against networks in other countries.²⁰⁷

Cooperation with Taiwan on the development of defense technology is another area in which the U.S. military could benefit

years and we look forward to continued improvement so there can be peaceful resolution of their differences." Hillary Clinton, "America's Pacific Century" (Honolulu, HI, November 10, 2011).

from Taiwan's strengths. Taiwan has a great deal of expertise in information and communications and cruise missile technology. It also is able to produce these technologies at lower cost than the United States.²⁰⁸ Mr. Stokes and Mr. Hsiao suggest "Taiwan and the U.S. may find mutually beneficial ways to integrate their efforts including in defense-related R&D and low cost, high quality electronic components that could reduce costs for U.S. weapon systems."²⁰⁹ This kind of collaboration also could have the benefit of increasing interoperability between U.S. and Taiwan military platforms and systems.

In addition to defense and security, economics and trade are a major part of the rebalance to Asia policy, with the TPP as the central economic policy initiative. Taiwan has made joining the multilateral trade agreement a priority. In April 2014, President Ma told an audience at the Center for Strategic and International Studies that "a TPP with Taiwan's membership would not only assure Taiwan's economic security, but would also help strengthen the economic presence of the U.S. in the Asia Pacific region."²¹⁰ Although there are substantial political obstacles in Taiwan and the United States to Taiwan joining the TPP, the U.S. government in 2014 welcomed Taiwan's interest in the TPP.²¹¹

Finally, in line with another aspect of the rebalance to Asia policy, Taiwan can play a role in the development of democracy and the promotion of universal rights and freedoms in the Asia Pacific. Taiwan is a vibrant democracy in a region with many authoritarian governments. As an example of democratic governance, human rights, freedom of expression, and rule of law to its neighbors, most importantly to China, Taiwan can support positive change in these countries. Highlighting Taiwan's achievements in these areas in official statements could support and augment U.S. efforts to promote democracy and human rights in the region and around the world.²¹²

Implications for the United States

The United States and Taiwan maintain a strong relationship built on shared values, commercial interests, and commitment to assist Taiwan's defensive capability. Taiwan's position as a major U.S. trading partner, and its important role in the global hi-tech supply chain, make it vital to U.S. economic interests. Taiwan companies are leaders in the global semiconductor industry and their need for advanced U.S. machinery has made semiconductor, microchip, and LCD manufacturing machines the top U.S. export to Taiwan. In addition, Taiwan's role as a regional leader in democracy, human rights, and environmental protection further strengthens this relationship and provides opportunities for regional partnering.²¹³

Six years of cross-Strait rapprochement have been beneficial to the United States by temporarily reducing the likelihood of military conflict, enhancing regional stability and development, and allowing U.S. policymakers to address other priorities in the U.S.-China and U.S.-Taiwan relationships.

However, improved cross-Strait relations have not resolved the fundamental sovereignty issues between Taiwan and China. Deepening economic integration has increased Taiwan's dependence on

China's economy and raised its vulnerability to Chinese economic and political coercion. China could leverage this dependence to advance its goal of unification with Taiwan.

In addition, China's military modernization presents an intense challenge to Taiwan's ability to defend itself and the U.S. military's ability to intervene successfully in a cross-Strait conflict. It also improves China's ability to use the threat of military force to coerce Taiwan into making political concessions. Mr. Easton testified to the Commission that "if the PLA used all the tools at its disposal in a coordinated fashion, it could turn the defense of Taiwan into the democratic world's most stressful military challenge. To put it another way, no other U.S.-friendly democracy faces the level of military threat that Taiwan does."²¹⁴

Taiwan is confronted with the question of how to meet the requirements of national defense while also addressing domestic and social welfare issues. Taiwan is taking steps to enhance its defensive capabilities and increase the quality of its military personnel, but some members of Congress and outside observers have raised questions and concerns about whether Taiwan's defense spending is sufficient to address the threat from China's military modernization.²¹⁵

Separate from questions regarding Taiwan's defense spending, in the 2000s, the question of whether the Taiwan military, government, and public would resist a PLA attack on Taiwan was the subject of much discussion by U.S. analysts. Lieutenant Commander John E. Lee, USN, described the issue as follows: "In a conflict with [China], Taiwan's 'will to fight' is its strategic center of gravity—the source of massed moral strength, whose degradation would have a decisive impact on Taiwan's ability to resist the enemy."²¹⁶ Since then there has been little discussion of this issue. However, Mr. Cole has written about Taiwan's will to fight in recent years, and he asserts that "once bombs and missiles, however precise, [begin] raining down on Taiwan, killing family members, friends, and neighbors, most Taiwanese would rally round the flag."²¹⁷

More broadly, Taiwan's role in regional stability extends beyond the Taiwan Strait due to its territorial claims in the East China Sea and the South China Sea. In 2013, Taipei contributed to stability in the East China Sea with the fisheries agreement it signed with the Japanese government. With regard to the South China Sea, Taiwan is pursuing a fisheries agreement with the Philippines that, according to a Taiwan official, the two countries are close to signing.²¹⁸ Analysts have proposed Taiwan could also help reduce tension in the South China Sea by clarifying its definition of the nine-dash line, which is the basis for both Taiwan's and China's claims in that area.²¹⁹

Conclusions

- Under President Ma, cross-Strait economic relations have deepened with the expansion of trade and investment and the signing of numerous economic agreements. However, these agreements face increasing public and political opposition. The Taiwan public's concerns about the effects of cross-Strait economic integration on the country's economy and political autonomy led to

a temporary postponement of cross-Strait negotiations and a push for increased oversight of cross-Strait agreements by Taiwan's legislature.

- Prior to the Sunflower Movement, cross-Strait relations reached a milestone with the first formal talks between the heads of Taiwan's Mainland Affairs Council and China's Taiwan Affairs Office in February 2014. After a temporary postponement following the protests, Taiwan and China restarted trade negotiations in September, but the Taiwan legislature will unlikely ratify any new agreements until it agrees on a formal legislative oversight process for cross-Strait agreements.
- U.S.-Taiwan relations took positive but small steps forward this past year with progress in the bilateral Trade and Investment Framework Agreement (TIFA) talks, the first trip to Taiwan by a Cabinet-level official since 2000, and recent growth in bilateral trade. Remaining obstacles to further progress in the TIFA talks are disputes over pork imports, pharmaceutical intellectual property rights, and private-equity investment regulations.
- The United States and Taiwan continue to engage in a robust but low-profile security partnership, including increased military-to-military contact in 2013. However, the U.S. government has not authorized a major arms sale to Taiwan since 2011, which allows China to further tip the cross-Strait balance of power in its favor.
- Taiwan has expanded its international engagement in recent years, but China continues to restrict Taiwan's participation in most international organizations. Furthermore, Taiwan's discussions with other countries regarding bilateral free trade agreements have reportedly stalled due to those countries' hesitation over China's opposition and questions about Taiwan's ability to ratify any negotiated free trade agreement following strong public opposition to the Cross-Strait Services Trade Agreement.
- Despite the recent cross-Strait rapprochement, the core sovereignty and security issues between Taiwan and China remain unresolved. China's military modernization has significantly increased Beijing's ability to conduct military operations against Taiwan and to deter, delay, and deny any U.S. intervention in a cross-Strait conflict. Taiwan's recent focus on developing innovative and asymmetric military capabilities and continued acquisition of major conventional platforms and weapon systems from the United States have improved Taiwan's military capabilities. However, the cross-Strait balance of power has shifted decidedly in China's favor.

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SECTION 4: HONG KONG

Introduction

This section examines the controversy over implementing electoral reform in Hong Kong's 2017 chief executive election and the resulting pro-democracy protests; China's increasing military presence in Hong Kong; and Hong Kong's declining freedom of the press. It is based on briefings by foreign government officials, meetings with subject matter experts, and independent research. The section concludes with a discussion of the implications of China's growing interference in Hong Kong's political development for the United States. At the time of writing (October 29, 2014), events surrounding Hong Kong's electoral reform process were still developing.

Controversy over Electoral Reform

Throughout the reporting year, debate surrounding how to elect Hong Kong's next chief executive in 2017 reflected a broader struggle regarding China's role in Hong Kong's political development. China's "basic policies" concerning Hong Kong are outlined in the 1984 Sino-British Joint Declaration, a legally binding international treaty that dictated the terms of Hong Kong's handover from the United Kingdom in 1997.¹ In the Joint Declaration, China granted Hong Kong a "high degree of autonomy," and promised that "Hong Kong will retain its current lifestyle and legal, social, and economic systems until at least the year 2047," while China would administer Hong Kong's defense and foreign affairs in accordance with the "one country, two systems" policy.² The Joint Declaration also established that Hong Kong's chief executive will be appointed by China's central government "on the basis of the results of elections or consultations to be held locally."³

Hong Kong's mini-constitution, the Basic Law, serves to legally implement China's obligations under the Joint Declaration.⁴ The Basic Law holds that the "ultimate aim" for the development of Hong Kong's electoral system is to select the chief executive "by universal suffrage upon nomination by a broadly representative nominating committee in accordance with democratic procedures."⁵ In the reporting year, Hong Kong's government advanced the electoral reform process to achieve the goal of implementing universal suffrage in the 2017 chief executive election. Pro-democracy advocates in Hong Kong supported not just expansion of suffrage to all Hong Kong's voters, but also relaxation of nominating requirements for potential candidates. While Beijing's decision on Hong Kong's electoral reform allows all eligible voters to participate in the next chief executive election, it proposes a nominating mechanism that will likely impede democratic candidates from standing

for election. This violates commitments made in the Basic Law to uphold election by “democratic procedures.”

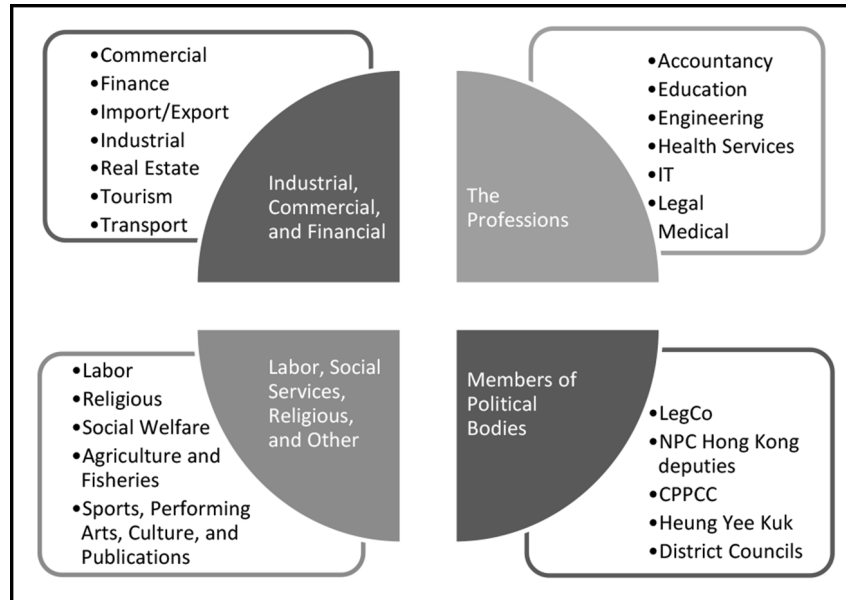
Electoral Reform Framework Proposed by Beijing

On August 31, 2014, China’s National People’s Congress (NPC) issued a decision that set new parameters for electing Hong Kong’s next chief executive. NPC’s ruling declared that in 2017 the chief executive may be elected by universal suffrage by the city’s 5 million eligible voters.⁶ While implementing universal suffrage is considered a milestone for Hong Kong’s political development, the NPC’s decision—hailed by Beijing as “historic progress”⁷—ironically limits the choice of candidates that voters will have if Beijing’s proposal is approved by Hong Kong’s Legislative Council (LegCo).⁸

Currently, to be nominated, a potential chief executive candidate must be supported by no fewer than 150 members (or 12.5 percent) of the 1,200-member election committee, which since Hong Kong’s handover has also been responsible for electing the chief executive.⁹ While election committee membership has expanded from 400 members in the first chief executive election to 1,200 members in the 2012 election, election committee members represent a mere 0.03 percent of Hong Kong’s registered voter population.*¹⁰ Moreover, election committee members are exclusively selected from four major “sectors” (see Figure 1). With strong business and political ties to mainland China, many members are local elites seeking to gain favor with Beijing.¹¹ One member of LegCo estimated that nearly 80 percent of election committee members are controlled by Beijing.¹² As a result of its small size and bias, the current nominating mechanism cannot reasonably be considered “broadly representative” as required by the Basic Law.¹³

*As of July 25, 2014, Hong Kong’s registered voters numbered 3,507,786. Hong Kong SAR’s Voter Registration Bureau, “Voter Registration Statistics,” July 25, 2014. <http://www.voterregistration.gov.hk/eng/statistic2014.html#1>.

Figure 1: Composition of the Election Committee
(Selected Subsectors)



Source: Hong Kong SAR Government, "Let's Talk and Achieve Universal Suffrage," December 2013, pp. 55–56. [http://www.2017.gov.hk/filemanager/template/en/doc/Con_Doc_e_\(FINAL\)_with_cover.pdf](http://www.2017.gov.hk/filemanager/template/en/doc/Con_Doc_e_(FINAL)_with_cover.pdf).

Implementing universal suffrage in the 2017 election will improve upon the current election configuration in which only a minuscule fraction of Hong Kong's voters can participate, but Beijing's proposed framework for nominating chief executive candidates is more restrictive than the current mechanism. According to the NPC, only two or three candidates may be nominated to stand for election in 2017. Each candidate must be supported by more than 50 percent of the nominating committee, compared with 12.5 percent in the 2012 election.¹⁴ Beijing announced that the 2017 nominating committee shall be formed "in accordance with the number of members, composition, and formation method of the Election Committee,"¹⁵ such that the new nominating committee is expected to maintain the same pro-Beijing bias as the current election committee. Democracy advocates in Hong Kong worry that, though all eligible voters would have the opportunity to participate in the next chief executive election if Beijing's proposed framework is approved, the proposed nominating mechanism rules out the possibility of "genuine" democratic election because voters will only be able to choose among two or three Beijing-approved candidates.¹⁶

Beijing's proposal also stipulates that the chief executive must be a "patriot"¹⁷ who "loves the country and loves Hong Kong."¹⁸ In remarks made in 1984 regarding the transfer of Hong Kong's sovereignty to China under the "one country, two systems" policy,

former Chinese leader Deng Xiaoping* identified a “patriot” as “one who respects the Chinese nation, sincerely supports the motherland’s resumption of sovereignty over Hong Kong, and wishes not to impair Hong Kong’s prosperity and stability.”¹⁹ In contrast, Beijing’s current interpretation of the term “patriot” suggests that Hong Kong’s next chief executive should be loyal to the Chinese Communist Party (CCP). In an article published by state-run media outlet *Global Times* on September 10, 2014, Chen Xiankui, a professor of Marxism at the Renmin University of China, wrote that “love of party and love of country are one and the same in modern China,” implying that loyalty to the CCP is requisite for patriotism.²⁰ Hu Xijin, editor-in-chief of the *Global Times*, likewise argued on September 3 that separation of love of the Party from the concept of patriotism is a “poisonous arrow” fired by those with “ulterior motives” seeking to undermine China’s unity.²¹

Beijing’s conflation of loving the country with loving the Party extends to Hong Kong’s administrators. During a press conference explaining Beijing’s electoral reform proposal, Li Fei, deputy secretary-general of the NPC Standing Committee (NPCSC), stated “it goes without saying” that chief executive candidates must love both the country and the Party.²² After democracy advocates in Hong Kong reacted angrily toward the patriotism requirement, NPCSC chairman Zhang Dejiang reportedly said the next chief executive “doesn’t have to love the Communist Party, or uphold the Communist Party,” according to Michael Tien, deputy chairman of a small, pro-Beijing political party in Hong Kong.²³ Zhang clarified that candidates “can’t be against the Communist Party and one-party rule.”²⁴ It is unclear whether conflicting views on patriotism among government officials are due to “ideological divergence” within the CCP or rhetorical confusion.²⁵

While the “one country, two systems” principle and the Basic Law stipulate that the chief executive is “accountable” to both the Chinese and Hong Kong governments,²⁶ nowhere does the law mandate that the chief executive must be a patriot or loyal to the CCP. Likewise, according to Deng Xiaoping’s original explanation of the “one country, two systems” policy, Hong Kong’s leader need not “be in favor of China’s socialist system,” but only “love the motherland and Hong Kong.”²⁷ However, in a strongly-worded white paper on the implementation of the “one country, two systems” policy in Hong Kong issued on June 10, 2014, China’s State Council Information Office reasserted the central government’s position on how the policy applies to Hong Kong’s administrators. The white paper, a high-level document intended to explain Beijing’s policies to foreign audiences, addressed what Beijing considers the “many wrong views” surrounding Hong Kong’s political development that stem from “confused” and “lopsided” understanding of the “one country, two systems” principle.[†]²⁸

*Though Deng never assumed the position of Communist Party Chairman, he held a working majority in the party’s leadership, and was considered China’s de facto ruler from the late 1970s through 1997.

†China has in the past issued white papers on Xinjiang (2003, 2009), Taiwan (1993, 2000), and several papers on separatist threats in Tibet. Open Source Center, *Hong Kong: White Paper Reaffirms China’s Predominance Over Political Reform*, August 25, 2014. ID: CHR20140825 61421053.

China's White Paper on the Practice of "One Country, Two Systems"

- *Hong Kong's Autonomy:* The white paper emphasized that Beijing maintains "overall jurisdiction" over Hong Kong, and that the "high degree of autonomy" guaranteed in Hong Kong's Basic Law is derived "solely from the authorization by the central leadership." The State Council asserted that, for Hong Kong, "there is no such thing called 'residual power.'" In accordance with the "one country, two systems" principle, the existence and preservation of Hong Kong's capitalist system "is subordinate to and derived from 'one country'."²⁹
- *Universal Suffrage:* The white paper proclaimed Beijing's commitment to implementing a conditional form of universal suffrage in the 2017 chief executive election, which "must serve the country's sovereignty, security and development interests" and "tally with Hong Kong's actual conditions." Any system of universal suffrage "must conform to HKSAR's [Hong Kong Special Administrative Region] legal status as a local administrative region directly under the central government" and in "accord with" relevant NPCSC resolutions.³⁰
- *Mandatory Patriotism:* The white paper asserted that "loyalty" and "loving the country" are "basic political requirements for Hong Kong's administrators."³¹ This assertion echoed claims made by Chinese officials throughout the reporting year that the next chief executive of Hong Kong should abide by the principle of "love the country, love Hong Kong" and should not oppose nor confront China's central government.³²

The barristers of the Hong Kong Bar Association (HKBA) have argued the requirement that Hong Kong's chief executive love China is "highly questionable as a matter of law" and "cannot possibly be a reasonable restriction" as it contradicts articles in the Basic Law that guarantee the right to stand for election in keeping with "democratic procedures."³³ Moreover, the HKBA has also argued that the categorization of Hong Kong's judges and judicial officers as "Hong Kong's administrators" upon whom a political requirement is imposed, as stated in the white paper, would send the message that Hong Kong's courts are "part of the machinery of the Government and sing in unison with it."³⁴

- *Foreign Intervention:* The white paper warned of "outside forces" that are attempting to "use Hong Kong to interfere in China's domestic affairs," and called on readers to "prevent and repel the attempt made by a very small number of people who act in collusion with outside forces" from interfering with Beijing's interpretation of "one country, two systems" in Hong Kong.³⁵ Chinese state-run media and Chinese officials warned that Western-backed "color revolutions"³⁶ and "street politics"³⁷ bring not democracy but chaos comparable to that in Ukraine and the Middle East.

While the existing system has twice allowed democrats to run,* requiring potential chief executive candidates to satisfy Beijing's standards of patriotism and earn approval from a largely pro-Beijing nominating committee makes it unlikely that a democratic candidate will be nominated, marking a "colossal step backwards" in Hong Kong's political development, according to former head of Hong Kong's civil service Anson Chan.³⁸ As such, Beijing's proposal appears to conflict with Article 45 of the Basic Law, which calls for election by universal suffrage in accordance with "democratic procedures."³⁹ Activists argue that Beijing's proposal also violates Article 25 of the International Covenant on Civil and Political Rights (ICCPR) as established by the United Nations Human Rights Council, which stipulates:

Every citizen shall have the right and the opportunity, without any of the distinctions mentioned in article 2 and without unreasonable restrictions:

- (a) *To take part in the conduct of public affairs, directly or through freely chosen representatives;*
- (b) *To vote and to be elected at genuine periodic elections which shall be by universal and equal suffrage and shall be held by secret ballot, guaranteeing the free expression of the will of the electors;*
- (c) *To have access, on general terms of equality, to public service in his country.*⁴⁰

Article 39 of the Basic Law states that the ICCPR "shall remain in force and shall be implemented through the laws" in Hong Kong.⁴¹ Therefore, any nominating mechanism that impedes certain candidates from standing election based on political affiliation is inconsistent with Article 39 and Article 45 of the Basic Law.

Considered by some scholars to be "the worst outcome imaginable,"⁴² Beijing's plan for Hong Kong's next chief executive election may also be designed to shut down aspirations for democracy in the Mainland. Larry Diamond, founding co-editor of the *Journal of Democracy* and senior fellow at Stanford University's Hoover Institution, said that the "Iranian-style rigged system" proposed by China offers no progress toward democracy, and is "not even an effort to gesture toward democracy."⁴³ Hu Jia, a prominent Chinese dissident in Beijing, believes that, as Hong Kong is a "mirror for people on the Mainland," "the outcome of this battle for democracy will also determine future battles for democracy for all of China."⁴⁴ By offering only "fake" democracy, Beijing may be sending a message to Tibet, Xinjiang, and even Taiwan that political change must ascribe to Beijing's rules.⁴⁵

There are few remaining options for rectifying Hong Kong's electoral system before changes to the 2017 electoral method are finalized. A proposal based on Beijing's framework will not be adopted unless it is approved by two-thirds majority in LegCo. If the pro-

* The two pro-democracy (or, "pan-democrat") chief executive candidates who stood for election in the past are Civic Party legislator Alan Leong Kah-kit in 2007 and Democratic Party legislator Albert Ho Chun-yan in 2012. Li Xueying, "China Insists on Right to Choose Candidates for Hong Kong Leader," *Straits Times*, August 31, 2014. <http://www.straitstimes.com/news/asia/east-asia/story/china-insists-right-choose-candidates-hong-kong-leader-xinhua-20140831>.

posals is not approved, Hong Kong will maintain its current electoral system under which the largely pro-Beijing election committee would choose the chief executive in 2017.⁴⁶ All 27 pan-democratic LegCo members (of 70 total members) vowed to veto a final proposal that is based on Beijing's framework,⁴⁷ but NPCSC Deputy Secretary-General Li Fei said that it would be a "big step backwards" if LegCo did not approve the plan.⁴⁸ Another possibility is that the formation of the nominating committee, yet undetermined, will not be as closely modeled on that of the election committee as expected. If the electoral base of the nominating committee were expanded, democratic candidates might still have a chance of being nominated. Regardless of which electoral configuration is chosen by Hong Kong, the NPCSC has the final say on any changes to the Basic Law, including changes to electoral methods.⁴⁹

Some analysts believe that Beijing's display of control over Hong Kong's political reform may reflect the central government's perception that Hong Kong's economic importance to China is declining. According to a report issued on August 27, 2014, by Trigger Trend, a Guangzhou-based research firm, Hong Kong is becoming a "mere second-tier city" in China.⁵⁰ Based on comparisons of Hong Kong's annual gross domestic product (GDP) growth with that of major regional cities in China, the report concluded that Guangzhou, Shenzhen, and Tianjin will overtake Hong Kong in terms of GDP by 2017, while inland cities including Chongqing, Chengdu, and Wuhan will catch up by 2022.⁵¹ Hong Kong has long been the gateway to foreign investment in China, and is consistently ranked near-top in global competitiveness by international organizations.* However, if China accomplishes its lofty economic reform goals to internationalize the renminbi, liberalize its capital account, and reform the banking system, Hong Kong's role as a middleman in facilitating capital flows into China may shrink, according to the Chinese Academy of Social Sciences, a government think tank.⁵² China is only obligated to maintain Hong Kong's status as a market economy until 2047 in accordance with the Sino-British Joint Declaration; if the two economies are less integrated at that time, Hong Kong's designation as a market economy is susceptible to change.

International Response to Beijing's Proposed Electoral Reform Framework

In July 2014, the United Kingdom (UK) parliament's Foreign Affairs Committee (FAC) launched an inquiry into the UK's relations with Hong Kong 30 years after the signing of the Joint Declaration.⁵³ The inquiry aims to determine whether Britain and China are "living up" to commitments made to preserve residents' lifestyle, rights, freedoms, and social system for 50 years after the handover. Lord Chris Patten, the last colonial governor of Hong Kong, believes that the United Kingdom has a "continuing moral and political obligation" to ensure that China keeps the commitments it made.⁵⁴ The inquiry has been met with suspicion and fierce opposition from Chinese officials, who call for it to be can-

*In 2014, Hong Kong ranked second by the World Bank in ease of doing business; fourth by the International Institute for Management Development in world competitiveness; and first by The Heritage Foundation in economic freedom.

celled as it interferes in China's internal affairs.⁵⁵ Liu Xiaoming, Chinese ambassador to Britain, warned FAC chairman Richard Ottaway that the inquiry does not "serve the prosperity and stability of Hong Kong, or the healthy development of China-UK relations," and that it "will ultimately harm the interests of Britain."⁵⁶

In response to Beijing's election framework proposal, the U.S. Department of State warned that Hong Kong's stability and prosperity are dependent on maintaining the city's status as "an open society with the highest possible degree of autonomy and governed by rule of law."⁵⁷ After U.S. national security advisor Susan Rice met with top Chinese officials in early September 2014, U.S. officials said "the ability for people of Hong Kong to choose their leadership based on the will of voters" is fundamental, and while Beijing's proposal is one step of the electoral reform process, "there's further to go."⁵⁸ Following the eruption of pro-democracy protests in Hong Kong in late September 2014, White House Press Secretary Josh Earnest said the legitimacy of the chief executive would be diminished if voters were not given "a genuine choice of candidates that are representative of the peoples' and the voters' will."⁵⁹ When U.S. Secretary of State John Kerry addressed the electoral decision protests in a meeting with Chinese Foreign Minister Wang Yi in Washington, DC, on October 1, 2014, Mr. Wang insisted that "Hong Kong affairs are China's internal affairs," and that "illegal acts that violate public order" will not be tolerated.⁶⁰ Hua Chunying, spokesperson for China's Ministry of Foreign Affairs, reaffirmed that China "firmly opposes external forces supporting illegal activities, such as the [democracy campaign known as the] Occupy Central movement," and is "opposed to any foreign and external interference in China's internal affairs by any country."⁶¹ President Obama is expected to raise the issue with Chinese President Xi Jinping in November.⁶²

Hong Kong's Democratic Movement

The people of Hong Kong remained politically active throughout the year, as demonstrated by the high volume of protests held. Notably, on June 4, 2014, the 25th anniversary of the Tiananmen Square massacre, more than 100,000 Hong Kong residents gathered to commemorate the victims of China's crackdown on peaceful student protest. The largest since 1989,⁶³ the vigil mirrored growing discontent among some Hong Kong residents with China's historical attempts to restrict civil liberties. On July 1, 2014, the 17th anniversary of Hong Kong's handover, democracy advocates peacefully participated in one of the largest marches in Hong Kong's history, from Victoria Park through the Central business district. Estimates of attendance vary widely: police said that the number of marchers peaked at just over 98,000, while the University of Hong Kong and *South China Morning Post* estimated the total was closer to 150,000. Pro-democracy group Civil Human Rights Front, organizer of the march, estimated that 510,000 people marched during the eight-hour demonstration.⁶⁴

Intense political campaigning in the lead-up to the central government's decision on electoral reform in 2017 spurred reactions from groups across the political spectrum. Democracy advocates drew wide support from students, middle-class voters, independent

media,* and members of the city's judiciary. The most prominent pro-democracy force, known as Occupy Central with Love and Peace (Occupy Central), is a civil disobedience campaign organized in 2013 to advocate for democratic elections in Hong Kong. Since its inception, Occupy Central has widely publicized that 10,000 of its participants will occupy Hong Kong's Central business district, effectively blocking access to government offices and buildings that operate there, unless Beijing accepts sufficiently democratic elections in Hong Kong.⁶⁵

Both Hong Kong and Chinese authorities expressed disdain for the Occupy Central movement. Current Chief Executive Leung Chun-ying (CY Leung) and Chinese Vice President Li Yuanchao denounced the movement as illegal, and threatened that carrying out any protests would "delay universal suffrage."⁶⁶ On August, 17, 2014, protesters supporting Beijing's view and estimated to number between 88,000 and 111,000 marched through the city to express their opposition to Occupy Central, which they claimed would disrupt peace and prosperity in Hong Kong.⁶⁷ Amid allegations that marchers were bribed to attend, one Chinese-language news source reported that the Federation of Hong Kong Shenzhen Associations might have arranged for as many as 20,000 people to march in exchange for \$38 and a free lunch.⁶⁸

Occupy Central also attracted criticism from multinational companies. The Big Four global accounting companies (Ernst & Young, KPMG, Deloitte Touche Tohmatsu, and PricewaterhouseCoopers) jointly issued advertisements in three Chinese-language newspapers stating their opposition to Occupy Central, warning that it threatens rule of law and disrupts business with multinational clients.⁶⁹ After pulling valuable advertisements from pro-democracy news outlets (see "Declining Freedom of the Press," later in this section), British bank HSBC urged investors to sell stock in Hong Kong companies citing "negative news flows" regarding Occupy Central that could serve to "sour relations with China and ... hurt the economy."⁷⁰

Leading up to Hong Kong's annual July 1 march marking the region's 1997 handover, Occupy Central organized an unofficial city-wide referendum on three electoral reform proposals, all of which advocated some form of public nomination (see Table 1).⁷¹ Nearly 800,000 Hong Kong residents, or 22.4 percent of registered voters, participated in the referendum.⁷² Of the three proposals, about 42 percent of voters backed that of the Alliance for True Democracy, which gives nomination privileges to the public, political parties, and nominating committee members. Nearly 90 percent of voters wanted LegCo to veto any government proposal that does not allow for genuine fair nomination of chief executive candidates.⁷³ Public nomination has since been ruled out by the Chinese government, arguing that the Basic Law mandates nomination by a "broadly representative" nominating committee.⁷⁴

* In this section, independent media refers to media sources that retain a high degree of freedom from political intervention and commercial influence, and promote democracy and freedom of speech in Hong Kong. "Hong Kong In-Media," Multiple Journalism. <http://www.multiplejournalism.org/case/hong-kong-in-media/e-a-c-c-a-e-i>.

Table 1: Referendum Proposals for Chief Executive Nomination

Proposal Originator	Supporters	Nomination Requirements
Alliance for True Democracy	Democratic and Civic parties; 26 pro-democracy legislators (of 27 total); Joseph Cheng (convener).	Candidates require either support of at least 1 percent of registered voters; endorsement from political parties that have won at least 5 percent of votes in the previous legislative election; or, direct election by nominating committee. ⁷⁵
Scholarism and Hong Kong Federation of Students	Civic Party; Joshua Wong (convener).	Candidates require support of at least 1 percent of registered voters. ⁷⁶
People Power	2 legislators; Wong Yuk-man and Albert Chan (conveners).	Candidates are nominated by the public, LegCo members, and district council members. ⁷⁷

Voter turnout surpassed expectations despite “one of the largest cyberattacks in history” temporarily shutting down the voting website.⁷⁸ Matthew Prince, chief executive of online security firm CloudFlare, explained that the distributed denial-of-service (DDoS) attacks on the voting site, considered to be among the “most sophisticated” DDoS attacks ever seen, shut down the site by hijacking computers scattered across the world with malware or viruses and using them to send requests to the site in extremely rapid succession.⁷⁹ According to Young Wo-sang, poll IT advisor and convener of the Internet Society of Hong Kong’s security and privacy working group, 30 to 40 percent of the 10 billion DDoS attacks came from IP addresses registered to mainland firms in Hong Kong.⁸⁰

In the week leading up to the National Day holiday, which celebrates China’s founding, on October 1, 2014, public dissatisfaction with Beijing’s electoral reform proposal broke out in waves of protest throughout Hong Kong. On September 22, thousands of Hong Kong university students commenced a five-day strike by boycotting classes and demanding “genuine” electoral choice.⁸¹ The Hong Kong Federation of Students, organizer of the boycott, estimated that 13,000 of Hong Kong’s 78,000 undergraduate students attended a democracy rally originating at the Chinese University of Hong Kong on September 22.⁸² By Friday, September 26, university students were joined by approximately 1,500 grade school students outside the home of CY Leung where they demanded to discuss Hong Kong’s democratic future with him.⁸³ Receiving no response, a group of about one hundred protestors gathered near the government headquarters. Some attempted to breach a barricaded area known as Civic Square that was blocked by police, who used pepper spray and arrested some protestors.⁸⁴

With participants estimated to number close to 200,000,⁸⁵ protests continued to escalate into the early morning of September 28, when riot police fired 87 cans of tear gas at protestors in order to clear the swelling crowds from the business district roadways.⁸⁶ Cheung Tak-keung, assistant commissioner of Hong Kong police,

said police had “no alternative” but to fire tear gas—considered a tactic of “minimum force”—to control crowds.⁸⁷ One day later, inspired by “the courage of the students and members of the public in their spontaneous decision to stay” despite police action, Occupy Central organizers announced the movement’s official commencement ahead of schedule to join student protests.⁸⁸ The protesters—now comprising Occupy Central, the students, and other supporters—adopted the moniker “Umbrella Revolution” to describe the movement, as many demonstrators used umbrellas to shield themselves from pepper spray and tear gas.⁸⁹

After riot police were withdrawn on September 29, protesters continued demonstrating through National Day on October 1. Some protesters, including Occupy Central co-founder Benny Tai Yiu-ting and organizers of the Hong Kong Federation of Students, demanded that Mr. Leung step down.⁹⁰ While removing Mr. Leung from office would placate protesters’ demands in the short-term without obstructing Beijing’s plan for electoral reform, any new leader to take office before Beijing’s reforms are implemented would be selected by the electoral method currently in place.⁹¹ On October 2, the Communist Party newspaper *People’s Daily* reported that the central government would continue “unswervingly” to support Mr. Leung.⁹² Public criticism of Mr. Leung intensified, however, following revelations of his failure to disclose payments he received totaling \$6.4 million from an Australian engineering company during his term as chief executive.⁹³ According to Mr. Leung’s statement, he is not required by Hong Kong law to disclose the payments.⁹⁴

In reaction to the Umbrella Revolution protests, Hong Kong Chief Secretary Carrie Lam said on September 29 that further government discussions on political reform would be postponed until the Hong Kong government could “re-examine the situation and find a better time to introduce the next round of consultations.”⁹⁵ Mr. Leung said that protesters should not expect the NPC to reconsider or reverse their ruling on Hong Kong’s electoral reform because “the Chinese government won’t give in to threats asserted through illegal activity.”⁹⁶ An advisor to Mr. Leung indicated that the Hong Kong government’s strategy for handling the protests was to “wait and patiently deal with the crisis . . . to resolve it peacefully,”⁹⁷ but an editorial published in the *People’s Daily* on October 2 threatened that the “consequences will be unimaginable” for protesters, who “incited the masses, paralyzed transportation, disrupted businesses, stirred up conflict, and interfered with the daily lives of Hong Kong people,” and accused Occupy Central of obstructing Hong Kong’s “smooth transition to democracy.”⁹⁸

With no clear resolution in sight, demonstrations over Beijing’s decision continued through October in the face of pressure from police, the public, and violent gangs. Starting October 3 and continuing sporadically throughout the protests, gangs suspected of having links to the Triads, an organized crime group, infiltrated crowds supporting and opposing the Occupy Central protests, provoking violence among peaceful demonstrations in the Mong Kok district. According to police superintendent Dan Ng Wai-hon, up to 200 suspected gangsters, of whom more than 40 were arrested in connection with the October 3–4 attacks for fighting and illegal

gathering, “were well-organized and came with a purpose,” though police are still investigating their exact motives.⁹⁹ On October 15, clashes between protesters and police over the removal of barricades to resume traffic flow resulted in the beating of a handcuffed protester by seven police officers, who were later suspended.¹⁰⁰

Following the cancellation of two previously scheduled negotiations, Hong Kong government officials met with five student leaders on October 21 to discuss their perspectives on electoral reform.¹⁰¹ In response to students’ concerns that the Hong Kong government’s July 2014 report to Beijing on popular political views misled the NPC and influenced its proposed guidelines, Chief Secretary Lam conceded that the government was willing to submit a new report to Beijing acknowledging the popular discontent stirred up by the NPC’s electoral reform decision.¹⁰² The students and other protesters intend to continue demonstrating until their demands for an open nominating process are met, but Mr. Leung reiterated that the Hong Kong government “cannot make something that is not in the Basic Law possible,” and “the Central Authorities . . . will not retract the decision of the Standing Committee.”¹⁰³ At the time of writing (October 29, 2014), student protesters and government officials remained deadlocked over Beijing’s decision.

Macau and Taiwan Follow Hong Kong

Inspired by Occupy Central’s June referendum, democracy activists in Macau held their own informal referendum from August 24–30, 2014, to determine whether residents support universal suffrage in the 2019 chief executive election.¹⁰⁴ Only hours after the referendum began on August 24, police arrested five participants, including poll organizer Jason Chao, on charges of “qualified disobedience,” and started shutting down polling stations.¹⁰⁵ Despite heavy police interference, nearly 9,000 residents cast their votes through an online polling website similar to that used in Hong Kong’s referendum. The results of the poll showed that 89 percent of participants do not trust the current chief executive, Fernando Chui, and that 95 percent of participants support universal suffrage in the 2019 chief executive election.¹⁰⁶ Chief Executive Chui was re-elected to office on August 31 by a 400-member pro-China election committee.¹⁰⁷ He was the only candidate.¹⁰⁸

For Taiwan, the reform outcome in Hong Kong serves as a warning that, if Taiwan were reunified with China, Beijing would not likely adhere to its promise to protect Taiwan’s civil liberties. In 1982, the NPC made a constitutional provision for reunifying Taiwan with China as a special administrative region under the “one country, two systems” principle, exactly like Hong Kong.¹⁰⁹ Under this provision, “Taiwan’s current social and economic systems [would] remain unchanged, its way of life [would] not change, and its economic and cultural ties with foreign countries [would] not change.”¹¹⁰ On September 26, 2014, President Xi reaffirmed China’s “firm and unwavering stance” that the best way to reunify Taiwan with China would be under the “one country, two systems” framework.¹¹¹ Alan D. Romberg, director of the East Asia program at public policy think tank the Stimson Center, argued that China’s strongly-worded white paper on the application of the “one country, two systems” policy in Hong Kong strengthened the case for Tai-

wanese independence as Hong Kong's "high degree of autonomy" has come under threat.¹¹²

Democracy advocates in Hong Kong and Taiwan have become more engaged under the shared threat of China's control. Activists in Hong Kong and Taiwan have supported each other throughout both Hong Kong's democratic movement and Taiwan's Sunflower Movement, in which participants occupied the Legislative Yuan in March and April 2014 to protest the Cross-Strait Services Trade Agreement (see Chapter 3, Section 3, "Taiwan," for fuller treatment of Taiwan and the Sunflower Movement). Taiwan's main political parties, typically fiercely divided, similarly expressed regret at Beijing's decision to limit electoral reform in Hong Kong. President Ma Ying-jeou expressed a "high degree of concern and support for [the] Hong Kong people's continuing fight" for democratic progress, while a spokesman from rival Democratic Progressive Party said that Beijing's decision "casts a shadow over the process of democratization."¹¹³

Following the breakout of Umbrella Revolution protests in response to Beijing's decision, President Ma reaffirmed that he "fully understand[s] and support[s] Hong Kong residents' demand for free nomination and election of Hong Kong's chief executive, and urge[s] the Mainland authorities to listen carefully to the voices of Hong Kong residents and handle the matter in a peaceful and cautious manner."¹¹⁴ On Taiwan's National Day, October 10, President Ma reiterated his strong support not just for Hong Kong's democratic movement, but for the Mainland's as well, stating "now is the most appropriate time for mainland China to move toward constitutional democracy."¹¹⁵

China's Increasing Military Presence in Hong Kong

Heightened activity by the People's Liberation Army (PLA) in Hong Kong throughout the reporting year alarmed Hong Kong pro-democracy advocates and media, as well as international observers. Under Article 14 of the Basic Law and in accordance with the "one country, two systems" policy, China's central government is responsible for the defense of Hong Kong. As such, the PLA's Hong Kong garrison is tasked with the following functions to "vigorously safeguard China's sovereignty and territorial integrity":¹¹⁶

1. To guard against and resist aggression, and to guarantee Hong Kong's security;
2. To shoulder the responsibility of defense and patrol duty;
3. To take charge of military installations;
4. To undertake relevant foreign military affairs.¹¹⁷

One indicator that Chinese military presence in Hong Kong will continue to expand is the Hong Kong Town Planning Board's unanimous approval on February 14, 2014, to rezone an area of public space measuring 2,970 square meters along the waterfront of Victoria Harbor where a Chinese military port is being constructed.¹¹⁸ The establishment of the "Central Military Dock" (CMD) was originally provisioned in 1994 under the Sino-British Defense Land

Agreement (DLA), and its construction is now near completion.¹¹⁹ Government officials said that the CMD would be used for “conducting military training, berthing military vessels, running ceremonial activities and carrying out pier maintenance,” though the dock will be open to the public when not in use.¹²⁰

Public objections to the CMD construction plan were significant; during the public consultation period, only 0.1 percent of about 19,000 comments favored the plan.¹²¹ One of the most contentious points was the Town Planning Board’s decision to rezone the area from “open space” to “military use.”¹²² Opponents of the CMD argue the rezoning not only disrupts public access to the waterfront promenade,* but ensures that public access and law enforcement in that area fall under the discretion of the commander of the PLA garrison rather than the Hong Kong police.¹²³ While Annex III of the DLA guaranteed that the “Hong Kong Government will leave free 150 meters of the eventual permanent waterfront . . . for the construction of a military dock after 1997,” it did not stipulate that zoning should be altered in any way.¹²⁴

In protest of the CMD construction plans, four activists forced their way into garrison headquarters on December 26, 2013, calling for the PLA to “get out” of Hong Kong.†¹²⁵ In a move widely perceived as retaliatory, the PLA staged its first air-and-sea drill of 2014 in Victoria Harbor less than one month after the protests. The January 24, 2014, drill was carried out by two frigates and three helicopters, and was intended to make the PLA “more familiar with the air-and-sea situation of Hong Kong and improve its ability to handle emergency situations,” according to state media.¹²⁶ Ni Lexiong, a naval expert and professor of Political Science and Law at Shanghai University, contended the drill was “aimed at warning the public that Hong Kong could continue to enjoy a certain level of freedom, but should not challenge the central government’s political authority, with military means being Beijing’s last step to maintain Hong Kong’s prosperity and stability.”¹²⁷

The CMD is the 19th military site in Hong Kong transferred from the British Army to the PLA as a Military Installations Closed Area (MICA), 18 of which currently cover an area totaling 2,700 hectares (27 square kilometers).¹²⁸ Hong Kong’s Garrison Law stipulates that all restricted access military zones must be defined by the garrison “in conjunction with” the Hong Kong government, while the “locations and boundaries” of such zones shall be declared by the Hong Kong government.¹²⁹ However, an undisclosed PLA radar station and compound atop Hong Kong’s tallest mountain, Tai Mo Shan, was discovered in July 2014.¹³⁰ The military and security publication *Jane’s Defense Weekly* reported the station is likely an electronic and signals intelligence (ELINT/SIGINT) facility, though the PLA refused to confirm, citing “military secrecy.”¹³¹ The facility is behind fences that restrict public access. Dr. Kenneth Chan Ka-lok, a LegCo member of the Civic

* When the CMD section of the promenade is closed for military use, the public can use a pedestrian walkway to the south of the dock area. Hong Kong Security Bureau, e-mail exchange with Commission staff, October 17, 2014.

† The four activists were subsequently arrested and convicted for breach of the Public Order Ordinance. Hong Kong Security Bureau, e-mail exchange with Commission staff, October 17, 2014.

Party, supported conducting a judicial review over the garrison's non-disclosure of the construction and use of the facility because "the public has no knowledge about this and [LegCo] cannot find anything about it from documents filed to the legislature."¹³² With regard to the compound, which is not listed among Hong Kong's 19 designated military sites (including the CMD), Dr. Chan said the PLA "should follow the Garrison Law provisions to designate the place as a military site with restricted public access."¹³³

On July 1, 2014, the same day as the annual march marking Hong Kong's handover, the PLA opened three military bases for public viewing of the barracks.¹³⁴ The garrison displayed several new pieces of military equipment during the "open day":

- Small arms: Type 11 pistol, Type 06 (QSW06) silenced pistol, and Type 10 (QBU10) antimateriel rifle
- The garrison's first two Type 056 Jingda-class corvettes: Huizhou (596) and Qinzhou (597)
- Logistics vehicles: Dong Feng EQ2102J-based trucks¹³⁵

New equipment is often first tested by the garrison before being introduced more widely into PLA service.¹³⁶ Among the previously used pieces of equipment displayed was a Z-9WA helicopter armed with two 23mm cannons.¹³⁷

Some Hong Kong commentators believe that the central government could deploy garrison forces to quell democracy protests and that recent increases in military activity are in part meant to intimidate protesters.¹³⁸ For example, during "counter-terrorism" drills open to the public that were conducted on July 1, PLA soldiers at the bases were seen carrying riot shields and pepper spray for the first time.¹³⁹ While the garrison "does not interfere in Hong Kong affairs," the Hong Kong government may by law request assistance from the garrison as necessary "in the maintenance of public order and in disaster relief."¹⁴⁰ Further, if the NPCSC decides that Hong Kong is in a state of emergency which "by reason of turmoil . . . endangers national unity or security and is beyond the control of the [Hong Kong] government," the central government in Beijing "may issue an order applying the relevant national laws" at its own discretion.¹⁴¹

Alan Hoo, chairman of the Basic Law committee and a Hong Kong delegate to the Chinese People's Political Consultative Conference (CPPCC), likened the Occupy Central movement to recent terrorist attacks in Kunming and Xi'an, and claimed that Occupy Central threatens China's national security.¹⁴² According to Hoo, Occupy Central not only justifies PLA intervention under a state of emergency, but also "fosters the legislation of Basic Law Article 23," which mandates:

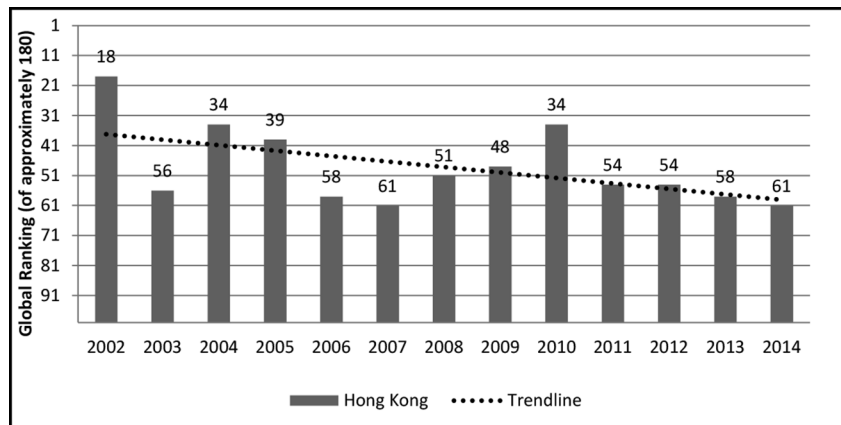
*The Hong Kong Special Administrative Region shall enact laws on its own to prohibit any act of treason, secession, sedition, subversion against the Central People's Government, or theft of state secrets, to prohibit foreign political organizations or bodies from conducting political activities in the Region, and to prohibit political organizations or bodies of the Region from establishing ties with foreign political organizations or bodies.*¹⁴³

In 2003, an anti-subversion bill proposed under Article 23 was shelved after 500,000 Hong Kong residents protested its implementation.¹⁴⁴ Earlier this year, mainland academics insisted that Hong Kong temporarily adopt Beijing's national security laws until its own Article 23 legislation is passed.¹⁴⁵ Jasper Tsang Yok-sing, president of the LegCo, said that such a proposal is not consistent with Article 23 of the Basic Law, which stipulates that Hong Kong's government should enact its own laws to handle subversion against the central government.¹⁴⁶

Declining Freedom of the Press

The reporting year was considered “the darkest for press freedom for several decades” by the Hong Kong Journalists Association (HKJA), as demonstrated by the region's continued fall in global press freedom rankings (see Figure 2).¹⁴⁷ According to Freedom House, a U.S.-based independent watchdog organization that ranks countries by press freedom indices, violence against journalists and pressure from mainland China were two factors that contributed to the downward trend in Hong Kong's press freedom dating back to 2004.¹⁴⁸ Likewise, Reporters Without Borders' 2014 world press freedom index indicated that “growing subjugation” of the Hong Kong administration and media to China's central government is “increasingly compromising media pluralism.”¹⁴⁹

Figure 2: Hong Kong's Global Press Freedom Ranking



Source: “Freedom of the Press,” Reporters Without Borders, 2002–2014. <http://en.rsf.org/>.

Self-censorship on the part of reporters and media outlets alike remained prevalent in Hong Kong in the reporting year.¹⁵⁰ According to a report from the Committee to Protect Journalists, more than half of Hong Kong's media owners hold political appointments in two of China's main political bodies, the NPC and the CPPCC, including Charles Ho of the Sing Tao news group; Richard Li (son of Li Ka-shing, commonly referred to as the richest person in Asia) of Now TV and the *Hong Kong Economic Journal*; and Peter Woo of i-Cable television.¹⁵¹ As a result, political considerations tend to overshadow objective reporting. According to a 2012 survey of jour-

nalists conducted by the HKJA, nearly 40 percent of respondents said that “they or their supervisors had recently played down information unfavorable to China’s central government, advertisers, media owners, or the local government.”¹⁵²

In the run-up to the 2017 election, the role of the press in determining Hong Kong’s democratic future has become even more critical. Members of the press and media outlets perceived as hostile to Beijing’s interpretation of “one country, two systems” continued to suffer professional and physical attacks, exemplified by the plight of one of Hong Kong’s few remaining independent newspapers, *Ming Pao*. In January 2014, *Ming Pao* announced the abrupt dismissal of its chief editor, Kevin Lau Chun-to, after nearly two years on the job. Though *Ming Pao* claimed Mr. Lau was simply moving to a new position, journalists and scholars speculated that Mr. Lau’s removal was retaliation for *Ming Pao*’s criticism of government policies and its revelation of the political scandals that derailed 2012 pro-Beijing chief executive candidate Henry Tang under Mr. Lau’s tenure.¹⁵³ *Ming Pao* also partnered with the Consortium of Investigative Journalists in January 2014 to publish an investigation into the overseas tax-haven accounts of Chinese officials.¹⁵⁴

Out of concern for the preservation of Hong Kong’s press freedom, more than 90 percent of *Ming Pao*’s editorial staff petitioned the paper to cite reasons for Mr. Lau’s dismissal, while hundreds of protesters gathered outside *Ming Pao*’s offices calling for media independence.¹⁵⁵ Rallies for press freedom continued throughout February 2014, when popular radio host Lee Wai-ling, who is known for her Beijing-critical commentary, was dismissed without explanation by Commercial Radio Hong Kong (CRHK), one of Hong Kong’s two commercial radio broadcasting companies.¹⁵⁶ To continue broadcasting, CRHK must apply to extend its license, issued by the Hong Kong Broadcasting Authority, by August 25, 2015. It is an “open secret,” according to former CRHK broadcasting director Cheung Man-ye, that outspoken program hosts are often forced to leave due to government pressure when a broadcasting company is applying for license renewal.¹⁵⁷

On February 26, less than two months after his dismissal, Mr. Lau was critically injured by a knife-wielding assailant in Hong Kong’s Sai Wan Ho neighborhood.¹⁵⁸ Prompted by the belief that the attack (and previous attacks on journalists)¹⁵⁹ was initiated by pro-Beijing assailants in an effort to threaten free media, nearly 10,000 protesters took to the streets on March 2, 2014, in support of Hong Kong’s press freedom, carrying banners reading “They Can’t Kill Us All.”¹⁶⁰ Two suspects found in southern China’s Guangdong Province were charged with Mr. Lau’s assault, and admitted that, as members of Hong Kong triad gang Shui Fong, they were each paid approximately \$130,000 to harm but not kill Mr. Lau and then go into hiding on the Mainland.¹⁶¹ Hong Kong Police Commissioner Andy Tsang Wai-hung said that the attack had “nothing to do with press freedom,” but that the assailants were merely hired hitmen.¹⁶² Less than one month after Mr. Lau’s attack, two Hong Kong media executives were attacked by four assailants with metal bars, an act condemned by the HKJA as another sign of Hong Kong’s deteriorating press freedom.¹⁶³

History of Attacks on Journalists in Hong Kong

- *March 2014*: Lam Kin-ming and Lei Lun-han, executives with a new publication, *The Hong Kong Morning News*, were assaulted by four assailants with metal pipes.
- *February 2014*: Kevin Lau Chun-to, former chief editor of the investigative newspaper *Ming Pao*, was badly injured by a knife-wielding assailant.
- *July 2013*: Sze Wing-ching, founder of free Hong Kong daily *am730*, had his car window smashed by two men as he was driving in downtown Hong Kong.
- *June 2013*: A car was rammed into the gates of the residence of Jimmy Lai, founder of the pro-democracy Next Media Group, and an ax and machete were left behind at the scene.
- *June 2013*: Chen Ping, publisher of the political weekly *iSun Affairs*, was beaten by two men wielding batons.
- *July 2008*: Jimmy Lai and pro-democracy leader Martin Lee were the targets of a failed assassination attempt.
- *November 2005*: A small homemade bomb was sent to *Ming Pao's* editorial offices along with a threatening letter, injuring one female employee.
- *August 1998*: Albert Cheng, host of talk radio's popular "Tea-cup in a Tempest" program, was slashed with carving knives on his way to work and seriously wounded.

Source: Isabella Steger, "Thousands Take to the Streets to Support Hong Kong Press Freedom." *Wall Street Journal*, March 2, 2014. <http://online.wsj.com/news/articles/SB10001424052702304585004579414611826771446>.

Beijing continued to exert political and economic pressure on businesses that advertise in pro-democracy media sources, further suppressing Hong Kong's press freedom. Hong Kong's Next Media Limited (Next Media), the publisher of the outspoken paper *Apple Daily*, was reportedly boycotted by its two biggest advertisers at the instruction of China's central government.¹⁶⁴ According to Next Media executive Mark Simon, HSBC and Standard Chartered banks were pressured by the central government's liaison office in Hong Kong into ending their long-held advertising relationships with *Apple Daily* in September 2013.^{165,166} Mr. Simon reported that prior to the boycott, the two banks spent approximately \$3.8 million on advertisements in *Apple Daily* annually.¹⁶⁷ In addition to the losses incurred by the banks' boycotts, Next Media reported that additional advertising boycotts on the part of Beijing-dependent firms cost the company at least \$26 million annually, or 10 percent of its present value.¹⁶⁸

Manipulation of media advertising by the central government is likely retaliation for the independent media's outspoken pro-democracy stance. Jimmy Lai, owner of Next Media and the "most powerful critic of the Chinese Communist Party in Hong Kong," has been an outspoken political activist since the 1989 Tiananmen Square massacre.¹⁶⁹ Under his leadership, Next Media released an online

animated video mocking Bloomberg's alleged self-censorship—based on commercial interests—to axe a story on the private wealth of Communist party elites in October 2013.¹⁷⁰ Bloomberg later denied the allegations.¹⁷¹ Next Media and *Apple Daily* also face the threat of cyber attacks in retaliation for critical reporting. In the days leading up to Occupy Central's unofficial referendum on June 20, *Apple Daily's* website was flooded by more than 10 billion DDoS attacks in a 24-hour period, many originating from IP addresses in China and Russia.¹⁷² *Apple Daily* suspected that the attacks were “carried out by hackers from China, trying to suppress Hong Kong people's determination to fight for democracy and to attack the pro-universal suffrage Next Media group.”¹⁷³

Independent media suffered another blow on July 26, 2014, when popular pro-democracy news website House News unexpectedly announced its closure, citing intense political pressure.¹⁷⁴ Tony Tsoi Tung-ho, House News co-founder and outspoken supporter of Occupy Central, explained his fear of the political atmosphere in a note he posted on the site:

Hong Kong has changed. To act as a normal citizen, a normal media outlet and to do something right for society is becoming difficult, or even terrifying—not that you feel alienated, but fearful. The ongoing political struggle makes people very anxious—many democrats are tracked and smeared. Their past records have been dug up. A sense of White Terror lingers in society and I feel the pressure as well.*¹⁷⁵

Mr. Tsoi also noted that the popular news aggregator site was not profitable because advertisement revenues were disproportionately low.¹⁷⁶ House News co-founder Leung Man-tao explained that “many big companies don't place advertisements on our website because of our critical stance towards the government and Beijing.”¹⁷⁷ In his shutdown announcement, Mr. Tsoi claimed that Hong Kong's tense political atmosphere and “abnormal society” have twisted the market, forcing House News to abandon its core democratic stance.¹⁷⁸

Implications for the United States

In accordance with the United States-Hong Kong Policy Act of 1992, the United States supports Hong Kong's high degree of autonomy. Beijing's interpretation of the “one country, two systems” policy and infringement on civil liberties guaranteed to Hong Kong in the Sino-British Joint Declaration not only undermine Hong Kong's high degree of autonomy, but also reflect the Chinese government's failure to comply with international commitments. Moreover, Beijing's application of “one country, two systems” in Hong Kong holds ominous implications for Taiwan if it were to be reunified with China under the same framework. The United States shares with Hong Kong an interest in upholding democratic values,

*The term “white terror” also refers to a period from 1949 to 1987 when several thousand perceived opponents (Communist or pro-Taiwanese independence) of Chinese Nationalist Party leader Chiang Kai-shek were incarcerated and executed in Taiwan. Many victims were intellectual and social elite.

human rights, rule of law, independent journalism, and open and fair market competition, all of which are essential for Hong Kong's continued prosperity and development as an international financial center.

Conclusions

- China's central government has put forth a framework for the election of Hong Kong's next chief executive in 2017 that effectively excludes democratic candidates from nomination and allows Beijing to control the outcome. This proposal conflicts with standards set forth in Hong Kong's Basic Law and the International Convention on Civil and Political Rights, and runs counter to international commitments made by China in the 1984 Sino-UK Joint Declaration to preserve Hong Kong's "high degree of autonomy" and way of life for 50 years following its 1997 handover from the United Kingdom.
- Increased Chinese military activity in Hong Kong signals China's determined presence there and serves to intimidate pro-democracy activists from participating in the Occupy Central movement and other peaceful movements out of fear of military retaliation.
- Increased infringement on Hong Kong's press freedom, particularly in the forms of violence against journalists and political pressure on advertisers, threatens the media's ability to serve as a watchdog. The steady erosion of press freedom is a worrying trend that has worsened over the last ten years, and appears to be targeted at outspoken pro-democracy media.

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RECOMMENDATIONS

China and Asia's Evolving Security Architecture

The Commission recommends:

- Congress require the Administration to submit a one-time inter-agency report clarifying the progress of the Asia rebalance policy.
- Congress emphasize the value of the U.S.-Australia alliance in its interactions with Australian legislators.
- Congress express support for Japan's efforts to exercise "collective self-defense" in its interactions with Japanese legislators.
- Congress examine the Administration's progress on greater intelligence, surveillance, and reconnaissance (ISR) integration and sharing between the United States and its allies and security associates in East Asia and Oceania. In addition, Congress should support efforts by the Department of Defense to improve ISR capabilities of allies and security associates in East Asia and develop a "common operating picture" for the East and South China Seas.
- Congress urge the Administration to encourage allies to develop their missile defense capabilities.

Recent Developments in China's Relationship with North Korea

The Commission recommends:

- Appropriate Congressional committees require the Departments of Defense and State to jointly produce a classified report on U.S. efforts to engage with China, South Korea, and Japan on issues related to North Korean stability. The report should include a discussion of prospects for political crisis or regime collapse in North Korea; a discussion of each country's outlook and approach to contingency planning for North Korea collapse scenarios; a detailed explanation of the current state of engagement between these countries on contingency planning for North Korea collapse scenarios; and an overview of existing track two dialogues aimed at enhancing understanding and cooperation among these countries on issues related to North Korean stability, to include an assessment of the effectiveness of these track two dialogues.
- Congress require future classified and unclassified Department of Defense reports on 'Military and Security Developments Involving the Democratic People's Republic of Korea' to include a full discussion of China's activities impacting the military and security situation in North Korea.

- Congress support nongovernmental organizations that encourage democracy and promote human rights and economic liberalization in North Korea.
- Congress support nongovernmental organizations that facilitate exchanges and dialogues between the United States, Japan, South Korea, and China on issues related to security and weapons proliferation on the Korean Peninsula.
- Members of Congress and Congressional staff in their interactions with official delegations from China exchange views on North Korea.

Taiwan

The Commission recommends:

- Congress direct the Administration to permit and encourage official travel to Taiwan for uniformed military personnel above the level of O6 and urge Cabinet-level officials to make more frequent visits to Taiwan to promote commercial, technological, people-to-people, and military exchanges.
- Congress urge the Administration to make available to Taiwan the arms and equipment it needs for its self-defense, consistent with the Taiwan Relations Act, due to the shifting cross-Strait military balance.
- Congress encourage the Administration to increase its public support of Taiwan's participation in international organizations such as the United Nations Framework Convention on Climate Change.
- Congress encourage the Administration to strengthen economic cooperation between the United States and Taiwan to further their economic growth and prosperity.

Hong Kong

The Commission recommends:

- Congress adopt a resolution urging China to keep its commitments to allow broadly representative nomination and election of Hong Kong's chief executive by universal suffrage in accordance with democratic procedures as articulated in the 1984 Sino-British Joint Declaration on the Question of Hong Kong, the Basic Law of the Hong Kong Special Administrative Region, and the International Covenant on Civil and Political Rights.
- Members of Congress, when visiting mainland China, also visit Hong Kong to engage with high-level administrators on such issues as democratic election.
- Members of Congress, jointly with members of British Parliament, promote Hong Kong's high degree of autonomy in accordance with the Sino-British Joint Declaration and the Basic Law.
- Congress renew the biennial reporting requirements of the U.S.-Hong Kong Policy Act of 1992.

- Congress reconvene a congressional caucus on Hong Kong to ensure continuous attention to the region's democracy and civil rights issues.

COMPREHENSIVE LIST OF THE COMMISSION'S RECOMMENDATIONS

Chapter 1: U.S.-China Economic and Trade Relations

Section 2: U.S.-China Bilateral Trade and Economic Challenges

The Commission recommends:

1. Congress direct the Government Accountability Office to update its report on the effectiveness of the U.S.-China Joint Commission on Commerce and Trade (JCCT) and the Strategic and Economic Dialogue (S&ED). The updated report should include an assessment of the objectives sought by the United States in these talks and whether China has honored its commitments to date.
2. Congress require the Department of the Treasury to include in its semiannual report to Congress specific information on the beneficial economic impact of China moving to a freely floating currency in terms of U.S. exports, economic growth, and job creation. In addition, Congress should urge the Administration to begin immediate consultations at the G-7 to identify a multilateral approach to addressing China's currency manipulation.
3. Congress direct the Interagency Trade Enforcement Center (ITEC) to provide briefings to the House Ways and Means and Senate Finance Committees and the House and Senate Appropriations Committees on its activities, since its creation, to coordinate and improve upon the enforcement of U.S. laws against unfair trade. Congress should examine whether providing statutory authority for ITEC would enhance enforcement activities and ensure that adequate resources are available and that other Departments and Agencies are responsive to its requests.
4. Congress consider amending existing trade enforcement rules to ensure that foreign investment in the United States cannot be used to impede the ability of domestic producers to bring petitions for trade enforcement actions. Congress could direct the Department of Commerce to update its regulations and procedures for antidumping and countervailing duty cases to create a rebuttable presumption that firms that are state-owned, state-controlled, or state-invested with facilities in the United States are operating at the direction of the state. Those state-directed companies would then be excluded from calculations of industry support or opposition unless they can prove that there is no such involvement or direction.

5. Congress consider whether state and local governments should be treated as interested parties under laws against unfair trade and thereby have standing to bring or participate in trade cases. Further, Congress should consider creating a private right of action allowing U.S. companies to take legal action against competitors directly in antidumping and countervailing duty cases, rather than having to rely on U.S. government assistance.
6. Congress seek clarification from the executive branch as to its interpretation of Article 15 of China's World Trade Organization Accession Protocol concerning China's achievement of "market economy" status.
7. Congress consider legislation that would make available a remedy to domestic firms that have been injured from the anti-competitive actions (such as access to low-cost or no-cost capital) of foreign state-owned companies for the injury that has been inflicted and allow for the potential award of treble damages.
8. Congress direct the Council of Economic Advisers (CEA) to brief the Joint Economic Committee on existing data collection efforts within the Administration regarding investments by Chinese entities in the United States. CEA shall describe the differing data sets available from public and private sources and the extent to which existing data provides adequate information to U.S. policy makers to assess changing trends and the potential economic implications from these investments.
9. Congress require the Department of Commerce to prepare a comprehensive analysis of excess productive capacity in China across a range of sectors, including, but not limited to, steel, glass, paper, cement and solar products, and provide a report to the President and to Congress on what actions should be taken to address this problem. This report shall be prepared annually for a period of five years, at a minimum. In addition, the Administration should consult with major trade allies with similar concerns about Chinese overcapacity in these sectors to determine what multilateral engagement would effectively deal with this problem. As part of this approach, the Administration shall evaluate the effectiveness of other efforts to address global and China's overcapacity in certain sectors, such as the Organization for Economic Cooperation and Development Steel Committee, the U.S.-China Steel Dialogue, and JCCT and S&ED talks.
10. Congress request that the Office of the United States Trade Representative, Department of Commerce, and International Trade Commission report to Congress on the extent to which existing authorities would allow for sanctions to be imposed against entities that benefit from trade secrets or other information obtained through cyber intrusions or other illegal means and were provided by a national government, foreign intelligence service, or other entity utilizing such means. If authorities do not exist, they should provide a proposal to address such problems.

11. Congress require the Office of the United States Trade Representative to brief the House Ways and Means and Senate Finance Committees, within 60 days, on trade enforcement issues involving China which have been initiated or announced since 2009, but have not yet been resolved, and identify what steps will be taken to ensure a more rapid resolution of such issues. The briefing shall include an estimate of the economic value to the U.S. in terms of production and job creation, if the identified market barrier or impediment were eliminated.

Section 3: China's Health Care Industry, Drug Safety, and Market Access for U.S. Medical Goods and Services

The Commission recommends:

12. Congress urge the Institutes of Medicine of the National Academies to convene a task force to assess purchasing decisions by U.S. wholesalers, retailers, and healthcare providers with regard to China-origin drugs and drug ingredients, and to recommend ways in which to improve information sharing and coordination with the Food and Drug Administration (FDA).
13. Congress urge the FDA to insist on expedited approvals from the Chinese government for work visas for the FDA staff, and on expanded authority to conduct unannounced visits at drug manufacturing facilities in China.
14. Congress monitor the efficacy of the FDA's regulatory activities in China, consider ways to optimize the use of appropriated funding, and identify what other steps are necessary to protect the health and safety of the U.S. population.
15. Congress pursue measures to improve the government's information about drug ingredient and dietary supplement producers, especially for imports. To this end, Congress should urge the FDA to work with its Chinese counterparts to establish a more comprehensive regulatory regime for registering China-based active pharmaceutical ingredient (API) producers, and make this producer information available on demand for U.S. agencies.
16. Congress adopt measures that make greater use of "track and trace" technology. To this end, Congress should: (1) urge the U.S. government negotiators to demand that China harmonize with internationally recognized standards its unique device identifiers for medical devices and its serialized verification of APIs, so as to allow for equivalency with U.S. systems and standards; (2) make the use of serial numbers for product verification at U.S. pharmacies mandatory at all times, not only in cases where a product is suspect (as currently spelled out in the Drug Quality and Security Act).
17. Congress direct the Trade Policy Review Group of the Office of the U.S. Trade Representative to review the interests of U.S. healthcare goods and services providers in the Chinese market, Chinese market barriers, and opportunities to promote human health in China in ways that support U.S. consumer and business interests.

Section 4: U.S.-China Clean Energy Cooperation

The Commission recommends:

18. Congress direct the Government Accountability Office to conduct an assessment of government-led U.S.-China collaborative initiatives on clean energy. This assessment should describe the nature of collaboration, including funding, participation, and reporting on the outcomes; consider whether the intellectual property rights of U.S. researchers and companies are being protected; examine whether Chinese state-owned enterprises are benefitting from U.S. taxpayer-funded research; investigate if any U.S. companies, universities and labs participating in government-led collaboration with China have been subject to cyber penetrations originating in China; and evaluate the benefits of this collaboration for the United States. Further, this assessment should examine redundancies, if any, among various U.S.-China government-led collaborative programs, and make suggestions for improving collaboration.
19. Congress require that the Department of Energy, in consultation with the Department of Commerce, identify barriers to market access in China for clean and renewable energy products and services and their impact on U.S. production and job creation, and report to the committees of jurisdiction, within 120 days, on specific action plans to address these barriers. As part of this report, the Departments shall identify sourcing patterns that have changed over the last 10 years in these sectors and also the extent to which U.S. companies are producing in the Chinese market to serve that market and whether they were previously able to manufacture these products in the United States for export to China.

Chapter 2: Military and Security Issues Involving China

Section 2: China's Military Modernization

The Commission recommends:

20. Congress fund the U.S. Navy's shipbuilding and operational efforts to increase its presence in the Asia Pacific to at least 67 ships and rebalance homeports to 60 percent in the region by 2020 so that the United States will have the capacity to maintain readiness and presence in the Asia Pacific, offset China's growing military capabilities, and surge naval assets in the event of a contingency.
21. Congress appoint an outside panel of experts to do a net assessment of the Sino-American military balance and make recommendations to Congress regarding the adequacy of the current U.S. military plans and budgets to meet the security requirements of the United States in the Pacific.
22. Congress ensure the adequacy of open source collection, production, and dissemination capabilities vis-à-vis security issues involving China.

23. Congress direct U.S. Pacific Command to brief Congress on the People's Liberation Army Navy's participation in the Rim of the Pacific-2014 exercise.
24. Congress direct the Department of Defense to provide to Congress its purpose and rationale for its military-to-military engagement planning with the People's Liberation Army, including proposed programs already discussed with the People's Liberation Army.
25. Given the importance of understanding China's nuclear and conventional ballistic missile programs, Congress direct the Government Accountability Office to provide an unclassified report, with a classified annex, that examines China's nuclear and conventional ballistic missile capabilities, intentions, and force structure.

Section 3: China's Domestic Stability

The Commission recommends:

26. Members of Congress reaffirm their support for human rights, freedom of expression, and rule of law in China and raise citizens' rights to freedom of speech, expression, and religion in their meetings with Chinese government officials.
27. Congress support the efforts of the U.S. Agency for International Development, U.S. Department of State, and the National Endowment for Democracy to strengthen governance and improve the well-being of Chinese citizens through capacity-building training programs and exchanges.
28. Congress closely monitor U.S.-China counterterrorism cooperation to ensure the United States is not endorsing or providing any support for China's suppression of Chinese citizens, including Uyghurs, Tibetans, and other ethnic minorities.
29. Congress continue to support and fund media outlets that promote the free flow of information and Internet freedom within China.

Chapter 3: China and the World

Section 1: China and Asia's Evolving Security Architecture

The Commission recommends:

30. Congress require the Administration to submit a one-time interagency report clarifying the progress of the Asia rebalance policy.
31. Congress emphasize the value of the U.S.-Australia alliance in its interactions with Australian legislators.
32. Congress express support for Japan's efforts to exercise "collective self-defense" in its interactions with Japanese legislators.
33. Congress examine the Administration's progress on greater intelligence, surveillance, and reconnaissance (ISR) integration and sharing between the United States and its allies and secu-

rity associates in East Asia and Oceania. In addition, Congress should support efforts by the Department of Defense to improve ISR capabilities of allies and security associates in East Asia and develop a “common operating picture” for the East and South China Seas.

34. Congress urge the Administration to encourage allies to develop their missile defense capabilities.

Section 2: Recent Developments in China’s Relationship with North Korea

The Commission recommends:

35. Appropriate Congressional committees require the Departments of Defense and State to jointly produce a classified report on U.S. efforts to engage with China, South Korea, and Japan on issues related to North Korean stability. The report should include a discussion of prospects for political crisis or regime collapse in North Korea; a discussion of each country’s outlook and approach to contingency planning for North Korea collapse scenarios; a detailed explanation of the current state of engagement among these countries on contingency planning for North Korea collapse scenarios; and an overview of existing track two dialogues aimed at enhancing understanding and cooperation among these countries on issues related to North Korean stability, to include an assessment of the effectiveness of these track two dialogues.
36. Congress require future classified and unclassified Department of Defense reports on ‘Military and Security Developments Involving the Democratic People’s Republic of Korea’ to include a full discussion of China’s activities impacting the military and security situation in North Korea.
37. Congress support nongovernmental organizations that encourage democracy and promote human rights and economic liberalization in North Korea.
38. Congress support nongovernmental organizations that facilitate exchanges and dialogues among the United States, Japan, South Korea, and China on issues related to security and weapons proliferation on the Korean Peninsula.
39. Members of Congress and Congressional staff in their interactions with official delegations from China exchange views on North Korea.

Section 3: Taiwan

The Commission recommends:

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42. Congress encourage the Administration to increase its public support of Taiwan's participation in international organizations such as the United Nations Framework Convention on Climate Change.
43. Congress encourage the Administration to strengthen economic cooperation between the United States and Taiwan to further their economic growth and prosperity.

Section 3: Hong Kong

The Commission recommends:

44. Congress adopt a resolution urging China to keep its commitments to allow broadly representative nomination and election of Hong Kong's chief executive by universal suffrage in accordance with democratic procedures as articulated in the 1984 Sino-British Joint Declaration on the Question of Hong Kong, the Basic Law of the Hong Kong Special Administrative Region, and the International Covenant on Civil and Political Rights.
45. Members of Congress, when visiting mainland China, also visit Hong Kong to engage with high-level administrators on such issues as democratic election.
46. Members of Congress, jointly with members of British Parliament, promote Hong Kong's high degree of autonomy in accordance with the Sino-British Joint Declaration and the Basic Law.
47. Congress renew the biennial reporting requirements of the U.S.-Hong Kong Policy Act of 1992.
48. Congress reconvene a congressional caucus on Hong Kong to ensure continuous attention to the region's democracy and civil rights issues.

ADDITIONAL VIEWS OF WILLIAM A. REINSCH, COMMISSIONER

Once again this year I support issuing the report, notwithstanding my reservations about some of its recommendations, which I discuss below.

Overall, the report does a fair job of detailing the Commission's work in 2014, and its recommendations accurately reflect the views of a majority of commissioners. Normally, at this point I lament the report's consistent tendency to focus unrelentingly on the bad news at the expense of promising developments in the relationship. This year, however, there is precious little good news to report. Business, labor, numerous nongovernmental organizations and the U.S. government itself are all dissatisfied with aspects of the bilateral relationship—economic, military and political.

Many of us had hoped the new leadership in China would bring with it reforms that would improve the multilateral climate. At this point not only is that prospect unrealized, but the new regime is proving itself far more aggressive against its neighbors, less cooperative in multilateral fora, and much quicker to suppress alternative voices inside China than its predecessors. Historians and political scientists are already beginning to find echoes of traditional Chinese imperial policies in the new leadership's bullying approach to its neighbors and its discriminatory actions against foreigners doing business inside the country. The latter have led more and more companies, both American and European, to reconsider their presence in China. While most will not leave, some will reduce their profile there, and many will begin to put the larger share of their new investment dollars or euros elsewhere.

While the Commission's mandate does not specifically extend to human rights issues, we do annually review Hong Kong, and there the Chinese government's increasingly muscular efforts to suppress dissidents at home and to impose conditions on Hong Kong's promised transition to universal suffrage affect the security relationship and deserve comment, as we have done. It is worth noting also that the Commission itself has been a victim of China's more restrictive policies, as the Chinese government has refused to allow us to visit China this year.

It is a real disappointment for me to write these things. I have spent a good part of my professional life, beginning in graduate school, studying China, and arguing for greater efforts at mutual understanding that focus on the benefits of cooperation rather than give in to the mutual suspicion that is rapidly enveloping both of us. I have always been an optimist about the relationship, but that view is becoming increasingly untenable, as China asserts itself in ways that are inevitably going to bump up against our interests in the region and in multilateral fora. It is common knowledge that there is no shortage of people in each country who believe the other is an existential threat, and I have thought for some time the fundamental policy goal for each country should be to keep those people out of power. I have not changed my view about that, but it does not appear to be happening in China, which will only make it harder to prevent it from happening here.

With respect to specific recommendations, while there are none that are as objectionable as some of those made in previous years, I am concerned, as usual, with the proliferation of economic proposals that in effect seek to revise our unfair trade practice rules. These recommendations are motivated in part by a search for new legal tools to address new forms of unfair competition. That is a worthy search, and stacking the deck in favor of American complainants is not by itself objectionable—and hardly different from what every other country is doing—but it is important that we proceed in ways that are consistent with our multilateral obligations, particularly those of the World Trade Organization. The United States is a rule-of-law country, which we frequently remind the Chinese (and others), and if we wish to move them in that direction, we must continue to maintain our own objective and transparent legal procedures which we can hold up as examples. Changes in law or practice that depart from that principle weaken our position when we negotiate with China and others. This year's recommendations, in my judgment, do not cross that line, but they come close to it.

I am pleased to note that the Commission has for once avoided the paranoia about Chinese investment in the U.S. that has characterized previous reports. I continue to believe the U.S. has adequate means in place via CFIUS to review a foreign investment's national security implications, which is the appropriate criterion. This issue is not going to go away, as Chinese investment in the U.S. will increase, but I hope the Commission will maintain a dispassionate view on the matter and avoid short-sighted recommendations that could hurt our economic growth if implemented.

Finally, close readers of this year's report will notice that it is less nuanced and less temperate with respect to China's military activities. That is deliberate, and while it is not my style, I did not object to it. It appears the Chinese have embarked on a path intended to push the U.S. to choose between confronting them militarily or abandoning our friends and allies in the region, gambling that we will choose the latter. That is a dangerous path, and the Commission is right to note it. Hopefully, adroit diplomacy, with both China and others in the region, will prevent us from having to make that choice.

APPENDIX I

UNITED STATES-CHINA ECONOMIC AND SECURITY REVIEW COMMISSION CHARTER

22 U.S.C. 7002 (2001)

The Commission was created on October 30, 2000, by the Floyd D. Spence National Defense Authorization Act for 2001 § 1238, Pub. L. No. 106-398, 114 STAT. 1654A-334 (2000) (codified at 22 U.S.C. § 7002 (2001), as amended by the Treasury and General Government Appropriations Act for 2002 § 645 (regarding employment status of staff) & § 648 (regarding changing annual report due date from March to June), Pub. L. No. 107-67, 115 STAT. 514 (November 12, 2001); as amended by Division P of the “Consolidated Appropriations Resolution, 2003,” Pub. L. No. 108-7 (February 20, 2003) (regarding Commission name change, terms of Commissioners, and responsibilities of Commission); as amended by Pub. L. No. 109-108 (enacted November 22, 2005) (regarding responsibilities of Commission and applicability of FACA); as amended by Pub. L. No. 110-161 (enacted December 26, 2007) (regarding changing annual report due date from June to December; reporting unobligated balances and submission of quarterly financial reports; deemed Commission a committee of Congress for printing and binding costs; amended employee compensation levels, and performance-based reviews and awards subject to Title 5 USC; and directed that travel by members of the Commission and its staff shall be arranged and conducted under the rules and procedures applying to travel by members of the House of Representatives and its staff).

§ 7002. United States-China Economic and Security Review Commission

(a) Purposes. The purposes of this section are as follows:

(1) To establish the United States-China Economic and Security Review Commission to review the national security implications of trade and economic ties between the United States and the People’s Republic of China.

(2) To facilitate the assumption by the United States-China Economic and Security Review Commission of its duties regarding the review referred to in paragraph (1) by providing for the transfer to that Commission of staff, materials, and infrastructure (including leased premises) of the Trade Deficit Review Commission that are appropriate for the review upon the submittal of the final report of the Trade Deficit Review Commission.

(b) Establishment of United States-China Economic and Security Review Commission.

(1) In general. There is hereby established a commission to be known as the United States-China Economic and Security Review Commission (in this section referred to as the “Commission”).

(2) Purpose. The purpose of the Commission is to monitor, investigate, and report to Congress on the national security implications of the bilateral trade and economic relationship between the United States and the People’s Republic of China.

(3) Membership. The United States-China Economic and Security Review Commission shall be composed of 12 members, who shall be appointed in the same manner provided for the appointment of members of the Trade Deficit Review Commission under section 127(c)(3) of the Trade Deficit Review Commission Act (19 U.S.C. 2213 note), except that—

(A) Appointment of members by the Speaker of the House of Representatives shall be made after consultation with the chairman of the Committee on Armed Services of the House of Representatives, in addition to consultation with the chairman of the Committee on Ways and Means of the House of Representatives provided for under clause (iii) of subparagraph (A) of that section;

(B) Appointment of members by the President pro tempore of the Senate upon the recommendation of the majority leader of the Senate shall be made after consultation with the chairman of the Committee on Armed Services of the Senate, in addition to consultation with the chairman of the Committee on Finance of the Senate provided for under clause (i) of that subparagraph;

(C) Appointment of members by the President pro tempore of the Senate upon the recommendation of the minority leader of the Senate shall be made after consultation with the ranking minority member of the Committee on Armed Services of the Senate, in addition to consultation with the ranking minority member of the Committee on Finance of the Senate provided for under clause (ii) of that subparagraph;

(D) Appointment of members by the minority leader of the House of Representatives shall be made after consultation with the ranking minority member of the Committee on Armed Services of the House of Representatives, in addition to consultation with the ranking minority member of the Committee on Ways and Means of the House of Representatives provided for under clause (iv) of that subparagraph;

(E) Persons appointed to the Commission shall have expertise in national security matters and United States-China relations, in addition to the expertise provided for under subparagraph (B)(i)(I) of that section;

(F) Each appointing authority referred to under subparagraphs (A) through (D) of this paragraph shall—

(i) appoint 3 members to the Commission;

(ii) make the appointments on a staggered term basis, such that—

(I) 1 appointment shall be for a term expiring on December 31, 2003;

(II) 1 appointment shall be for a term expiring on December 31, 2004; and

(III) 1 appointment shall be for a term expiring on December 31, 2005;

(iii) make all subsequent appointments on an approximate 2-year term basis to expire on December 31 of the applicable year; and

(iv) make appointments not later than 30 days after the date on which each new Congress convenes.

(G) Members of the Commission may be reappointed for additional terms of service as members of the Commission; and

(H) Members of the Trade Deficit Review Commission as of the date of the enactment of this Act [enacted Oct. 30, 2000] shall serve as members of the United States-China Economic and Security Review Commission until such time as members are first appointed to the United States-China Economic and Security Review Commission under this paragraph.

(4) Retention of support. The United States-China Economic and Security Review Commission shall retain and make use of such staff, materials, and infrastructure (including leased premises) of the Trade Deficit Review Commission as the United States-China Economic and Security Review Commission determines, in the judgment of the members of the United States-China Economic and Security Review Commission, are required to facilitate the ready commencement of activities of the United States-China Economic and Security Review Commission under subsection (c) or to carry out such activities after the commencement of such activities.

(5) Chairman and vice chairman. The members of the Commission shall select a Chairman and Vice Chairman of the Commission from among the members of the Commission.

(6) Meetings.

(A) Meetings. The Commission shall meet at the call of the Chairman of the Commission.

(B) Quorum. A majority of the members of the Commission shall constitute a quorum for the transaction of business of the Commission.

(7) Voting. Each member of the Commission shall be entitled to one vote, which shall be equal to the vote of every other member of the Commission.

(c) Duties.

(1) Annual report. Not later than June 1 each year [beginning in 2002], the Commission shall submit to Congress a report, in both unclassified and classified form, regarding the national security implications and impact of the bilateral trade and economic relationship between the United States and the People's Republic of China. The report shall include a full analysis, along with conclusions and recommendations for legislative and administrative actions, if any, of the national security implications for the United States of the trade and current balances with the People's Republic of China in goods and services, financial transactions, and technology transfers. The Commission shall also take into account patterns of trade and transfers through third countries to the extent practicable.

(2) Contents of report. Each report under paragraph (1) shall include, at a minimum, a full discussion of the following:

(A) The portion of trade in goods and services with the United States that the People's Republic of China dedicates to military systems or systems of a dual nature that could be used for military purposes.

(B) The acquisition by the People's Republic of China of advanced military or dual-use technologies from the United States by trade (including procurement) and other technology transfers, especially those transfers, if any, that contribute to the proliferation of weapons of mass destruction or their delivery systems, or that undermine international agreements or United States laws with respect to nonproliferation.

(C) Any transfers, other than those identified under subparagraph (B), to the military systems of the People's Republic of China made by United States firms and United States-based multinational corporations.

(D) An analysis of the statements and writing of the People's Republic of China officials and officially-sanctioned writings that bear on the intentions, if any, of the Government of the People's Republic of China regarding the pursuit of military competition with, and leverage over, or cooperation with, the United States and the Asian allies of the United States.

(E) The military actions taken by the Government of the People's Republic of China during the preceding year that bear on the national security of the United States and the regional stability of the Asian allies of the United States.

(F) The effects, if any, on the national security interests of the United States of the use by the People's Republic of China of financial transactions and capital flow and currency manipulations.

(G) Any action taken by the Government of the People's Republic of China in the context of the World Trade Organization that is adverse or favorable to the United States national security interests.

(H) Patterns of trade and investment between the People's Republic of China and its major trading partners, other than the United States, that appear to be substantively different from trade and investment patterns with the United States and whether the differences have any national security implications for the United States.

(I) The extent to which the trade surplus of the People's Republic of China with the United States enhances the military budget of the People's Republic of China.

(J) An overall assessment of the state of the security challenges presented by the People's Republic of China to the United States and whether the security challenges are increasing or decreasing from previous years.

(3) Recommendations of report. Each report under paragraph (1) shall also include recommendations for action by Congress or the President, or both, including specific recommendations for the United States to invoke Article XXI (relating to security exceptions) of the General Agreement on Tariffs and Trade 1994 with respect to the People's Republic of China, as a result of any adverse impact on the national security interests of the United States.

(d) Hearings.

(1) In general. The Commission or, at its direction, any panel or member of the Commission, may for the purpose of carrying out the provisions of this section, hold hearings, sit and act at times and places, take testimony, receive evidence, and administer oaths to the extent that the Commission or any panel or member considers advisable.

(2) Information. The Commission may secure directly from the Department of Defense, the Central Intelligence Agency, and any other Federal department or agency information that the Commission considers necessary to enable the Commission to carry out its duties under this section, except the provision of intelligence information to the Commission shall be made with due regard for the protection from unauthorized disclosure of classified information relating to sensitive intelligence sources and methods or other exceptionally sensitive matters, under procedures approved by the Director of Central Intelligence.

(3) Security. The Office of Senate Security shall—

(A) provide classified storage and meeting and hearing spaces, when necessary, for the Commission; and

(B) assist members and staff of the Commission in obtaining security clearances.

(4) Security clearances. All members of the Commission and appropriate staff shall be sworn and hold appropriate security clearances.

(e) Commission personnel matters.

(1) Compensation of members. Members of the United States-China Economic and Security Review Commission shall be compensated in the same manner provided for the compensation of members of the Trade Deficit Review Commission under section 127(g)(1) and section 127(g)(6) of the Trade Deficit Review Commission Act [19 U.S.C. 2213 note].

(2) Travel expenses. Travel expenses of the United States-China Economic and Security Review Commission shall be allowed in the same manner provided for the allowance of the travel expenses of the Trade Deficit Review Commission under section 127(g)(2) of the Trade Deficit Review Commission Act [19 U.S.C. § 2213 note].

(3) Staff. An executive director and other additional personnel for the United States-China Economic and Security Review Commission shall be appointed, compensated, and terminated in the same manner provided for the appointment, compensation, and termination of the executive director and other personnel of the Trade Deficit Review Commission under section 127(g)(3) and section 127(g)(6) of the Trade Deficit Review Commission Act [19 U.S.C. § 2213 note]. The executive director and any personnel who are employees of the United States-China Economic and Security Review Commission shall be employees under section 2105 of title 5, United States Code, for purposes of chapters 63, 81, 83, 84, 85, 87, 89, and 90 of that title [language of 2001 amendment, Sec. 645].

(4) Detail of government employees. Federal Government employees may be detailed to the United States-China Economic and Security Review Commission in the same manner provided for the detail of Federal Government employees to the Trade Deficit Review Commission under section 127(g)(4) of the Trade Deficit Review Commission Act [19 U.S.C. § 2213 note].

(5) Foreign travel for official purposes. Foreign travel for official purposes by members and staff of the Commission may be authorized by either the Chairman or the Vice Chairman of the Commission.

(6) Procurement of temporary and intermittent services. The Chairman of the United States-China Economic and Security Re-

view Commission may procure temporary and intermittent services for the United States-China Economic and Security Review Commission in the same manner provided for the procurement of temporary and intermittent services for the Trade Deficit Review Commission under section 127(g)(5) of the Trade Deficit Review Commission Act [19 U.S.C. § 2213 note].

(f) Authorization of appropriations.

(1) In general. There is authorized to be appropriated to the Commission for fiscal year 2001, and for each fiscal year thereafter, such sums as may be necessary to enable the Commission to carry out its functions under this section.

(2) Availability. Amounts appropriated to the Commission shall remain available until expended.

(g) Federal Advisory Committee Act. The provisions of the Federal Advisory Committee Act (5 U.S.C. App.) shall not apply to the Commission.

(h) Effective date. This section shall take effect on the first day of the 107th Congress.

Amendments:

SEC. 645. (a) Section 1238(e)(3) of the Floyd D. Spence National Defense Authorization Act for Fiscal Year 2001 (as enacted by Public Law 106–398) is amended by adding at the end the following: “The executive director and any personnel who are employees of the United States-China Economic and Security Review Commission shall be employees under section 2105 of title 5, United States Code, for purposes of chapters 63, 81, 83, 84, 85, 87, 89, and 90 of that title.” (b) The amendment made by this section shall take effect on January 3, 2001.”

SEC. 648. DEADLINE FOR SUBMISSION OF ANNUAL REPORTS BY UNITED STATES-CHINA ECONOMIC AND SECURITY REVIEW COMMISSION. Section 1238(c)(1) of the Floyd D. Spence National Defense Authorization Act for Fiscal Year 2001 (as enacted into law by section I of Public Law 106–398) is amended by striking “March” and inserting “June”.

Changes: Enacted into law by Division P of the “Consolidated Appropriations Resolution, 2003” Pub. L. No. 108–7 dated February 20, 2003:

H. J. Res. 2—

DIVISION P—UNITED STATES-CHINA ECONOMIC AND SECURITY REVIEW COMMISSION

SECTION 1. SHORT TITLE.—This division may be cited as the “United States-China Economic and Security Review Commission”.

SEC. 2. (a) APPROPRIATIONS.—There are appropriated, out of any funds in the Treasury not otherwise appropriated, \$1,800,000, to remain available until expended, to the United States-China Economic and Security Review Commission.

(b) NAME CHANGE.—

(1) IN GENERAL.—Section 1238 of the Floyd D. Spence National Defense Authorization Act of 2001 (22 U.S.C. 7002) is amended— as follows:

In each Section and Subsection where it appears, the name is changed to the “U.S.-CHINA ECONOMIC AND SECURITY REVIEW COMMISSION”—

(2) REFERENCES.—Any reference in any Federal law, Executive Order, rule, regulation, or delegation of authority, or any document of or relating to the United States-China Security Review Commission shall be deemed to refer to the United States-China Economic and Security Review Commission.

(c) MEMBERSHIP, RESPONSIBILITIES, AND TERMS.—

(1) IN GENERAL.—Section 1238(b)(3) of the Floyd D. Spence National Defense Authorization Act of 2001 (22 U.S.C. 7002) is amended by striking subparagraph (F) and inserting the following:

“(F) each appointing authority referred to under subparagraphs (A) through (D) of this paragraph shall—

“(i) appoint 3 members to the Commission;

“(ii) make the appointments on a staggered term basis, such that—

“(I) 1 appointment shall be for a term expiring on December 31, 2003;

“(II) 1 appointment shall be for a term expiring on December 31, 2004; and

“(III) 1 appointment shall be for a term expiring on December 31, 2005;

“(iii) make all subsequent appointments on an approximate 2-year term basis to expire on December 31 of the applicable year; and

“(iv) make appointments not later than 30 days after the date on which each new Congress convenes;”.

SEC. 635. (a) Modification of Responsibilities.—Notwithstanding any provision of section 1238 of the Floyd D. Spence National Defense Authorization Act for Fiscal Year 2001 (22 U.S.C. 7002), or any other provision of law, the United States-China Economic and Security Review Commission established by subsection (b) of that section shall investigate and report exclusively on each of the following areas:

(1) PROLIFERATION PRACTICES.—The role of the People’s Republic of China in the proliferation of weapons of mass destruction and other weapons (including dual use technologies), including actions, the United States might take to encourage the People’s Republic of China to cease such practices.

(2) ECONOMIC TRANSFERS.—The qualitative and quantitative nature of the transfer of United States production activities to the People’s Republic of China, including the relocation of high technology, manufacturing, and research and development facilities, the impact of such transfers on United States national security, the adequacy of United States export control laws, and the effect of such transfers on United States economic security and employment.

(3) ENERGY.—The effect of the large and growing economy of the People’s Republic of China on world energy supplies and the role the United States can play (including joint research and development efforts and technological assistance), in influencing the energy policy of the People’s Republic of China.

(4) UNITED STATES CAPITAL MARKETS.—The extent of access to and use of United States capital markets by the People's Republic of China, including whether or not existing disclosure and transparency rules are adequate to identify People's Republic of China companies engaged in harmful activities.

(5) REGIONAL ECONOMIC AND SECURITY IMPACTS.—The triangular economic and security relationship among the United States, Taipei and the People's Republic of China (including the military modernization and force deployments of the People's Republic of China aimed at Taipei), the national budget of the People's Republic of China, and the fiscal strength of the People's Republic of China in relation to internal instability in the People's Republic of China and the likelihood of the externalization of problems arising from such internal instability.

(6) UNITED STATES-CHINA BILATERAL PROGRAMS.—Science and technology programs, the degree of non-compliance by the People's Republic of China with agreements between the United States and the People's Republic of China on prison labor imports and intellectual property rights, and United States enforcement policies with respect to such agreements.

(7) WORLD TRADE ORGANIZATION COMPLIANCE.—The compliance of the People's Republic of China with its accession agreement to the World Trade Organization (WTO).

(8) FREEDOM OF EXPRESSION.—The implications of restrictions on speech and access to information in the People's Republic of China for its relations with the United States in the areas of economic and security policy.

(b) Applicability of Federal Advisory Committee Act.—Subsection (g) of section 1238 of the Floyd D. Spence National Defense Authorization Act for Fiscal Year 2001 is amended to read as follows:

(g) Applicability of FACA.—The provisions of the Federal Advisory Committee Act (5 U.S.C. App.) shall apply to the activities of the Commission.

The effective date of these amendments shall take effect on the date of enactment of this Act [November 22, 2005].

Changes: Enacted into law by the Consolidated Appropriations Act, 2008, Pub. L. No. 110–161 dated December 26, 2007:

H.R. 2764—

For necessary expenses of the United States-China Economic and Security Review Commission, \$4,000,000, including not more than \$4,000 for the purpose of official representation, to remain available until September 30, 2009: *Provided*, That the Commission shall submit a spending plan to the Committees on Appropriations no later than March 1, 2008, which effectively addresses the recommendations of the Government Accountability Office's audit of the Commission (GAO–07–1128): *Provided further*, That the Commission shall provide to the Committees on Appropriations a quarterly accounting of the cumulative balances of any unobligated funds that were received by the Commission during any previous fiscal year: *Provided further*, That for purposes of costs relating to printing and binding, the Commission shall be deemed, effective on the date of its establishment, to be a committee of Congress: *Provided further*, That compensation for the executive director of the Commission may not exceed the rate payable for level II of the Ex-

ecutive Schedule under section 5314 of title 5, United States Code: *Provided further*, That section 1238(c)(1) of the Floyd D. Spence National Defense Authorization Act for Fiscal Year 2001, is amended by striking “June” and inserting “December”: *Provided further*, That travel by members of the Commission and its staff shall be arranged and conducted under the rules and procedures applying to travel by members of the House of Representatives and its staff.

COMMISSION FINANCIAL MANAGEMENT

SEC. 118. (a) REQUIREMENT FOR PERFORMANCE REVIEWS.—The United States-China Economic and Security Review Commission shall comply with chapter 43 of title 5, United States Code, regarding the establishment and regular review of employee performance appraisals.

(b) LIMITATION ON CASH AWARDS.—The United States-China Economic and Security Review Commission shall comply with section 4505a of title 5, United States Code, with respect to limitations on payment of performance-based cash awards.

APPENDIX II

BACKGROUND OF COMMISSIONERS

The Honorable Dennis C. Shea, Chairman

Chairman Dennis Shea was appointed by Senate Republican Leader Mitch McConnell for a term expiring December 31, 2014. An attorney with 25 years of experience in government and public policy, he is the founder of Shea Public Strategies LLC, a public affairs firm based in Alexandria, Virginia. Before starting the firm, he served as Vice President for Government Affairs—Americas for Pitney Bowes Inc., a Fortune 500 company. Chairman Shea's government service began in 1988, when he joined the Office of Senate Republican Leader Bob Dole as counsel, subsequently becoming the Senator's deputy chief of staff in the Office of the Senate Majority Leader. In these capacities, he advised Senator Dole and other Republican senators on a broad range of domestic policy issues, was involved in the drafting of numerous pieces of legislation, and was recognized as one of the most influential staffers on Capitol Hill. In 1992, Chairman Shea's service with Senator Dole was interrupted when he ran for Congress in the Seventh District of New York. During the 1996 elections, Chairman Shea continued to help shape the national public policy debate as the director of policy for the Dole for President Campaign. Following the elections, he entered the private sector, providing legislative and public affairs counsel to a wide range of clients while employed at BKSH & Associates and Verner, Liipfert, Bernhard, McPherson, and Hand.

In 2003, Chairman Shea was named the Executive Director of the President's Commission on the United States Postal Service. Many of the Commission's recommendations were subsequently adopted in the landmark 2006 postal reform legislation.

In 2004, Chairman Shea was confirmed as Assistant Secretary for Policy Development and Research at the U.S. Department of Housing and Urban Development. As Assistant Secretary, Chairman Shea led a team responsible for conducting much of the critical analysis necessary to support the Department's mission. In 2005, Chairman Shea left to serve as Senior Advisor to Senator Elizabeth Dole in her capacity as chairman of the National Republican Senatorial Committee.

Chairman Shea received a J.D., an M.A. in History, and a B.A. in Government, from Harvard University. He is admitted to the bar in New York and the District of Columbia. The Chairman currently resides in Alexandria, Virginia, with his wife Elizabeth and daughter Juliette.

The Honorable William A. Reinsch, Vice Chairman

Vice Chairman William Reinsch was reappointed to the Commission by Senate Majority Leader Harry Reid for the term expiring December 31, 2015. He was elected as Chairman of the Commission for the 2014 Report cycle effective January 1, 2014, and previously served as Chairman of the Commission for the 2013 and 2011 Report cycles. Vice Chairman Reinsch served as Under Secretary for Export Administration in the U.S. Department of Commerce. As head of the Bureau of Export Administration, later named the Bureau of Industry and Security, Vice Chairman Reinsch was charged with administering and enforcing the export control policies of the U.S. government, including its antiboycott laws. Major accomplishments during his tenure included refocusing controls regarding economic globalization, most notably on high-performance computers, microprocessors, and encryption, completing the first revisions of the Export Administration regulations in over 40 years. In addition, he revised the interagency process for reviewing applications and permitted electronic filing of applications over the Internet.

During this time, Vice Chairman Reinsch delivered more than 200 speeches and testified 53 times before various committees of the Congress. Before joining the Department of Commerce, Vice Chairman Reinsch was a senior legislative assistant to Senator John Rockefeller and was responsible for the senator's work on trade, international economic policy, foreign affairs, and defense. He also provided staff support for Senator Rockefeller's related efforts on the Finance Committee and the Commerce, Science, and Transportation Committee.

For over a decade, Vice Chairman Reinsch served on the staff of Senator John Heinz as chief legislative assistant, focusing on foreign trade and competitiveness policy issues. During that period, Senator Heinz was either the chairman or the ranking member of the Senate Banking Committee's Subcommittee on International Finance. Senator Heinz was also a member of the International Trade Subcommittee of the Finance Committee. Vice Chairman Reinsch provided support for the senator on both subcommittees. This work included five revisions of the Export Administration Act and work on four major trade bills. Prior to joining Senator Heinz's staff, Vice Chairman Reinsch was a legislative assistant to Representatives Richard Ottinger and Gilbert Gude, acting staff director of the House Environmental Study Conference, and a teacher in Maryland.

Today Vice Chairman Reinsch is president of the National Foreign Trade Council. Founded in 1914, the council is the only business organization dedicated solely to trade policy, export finance, international tax, and human resources issues. The organization represents over 200 companies through its offices in New York City and Washington.

In addition to his legislative and private sector work, Vice Chairman Reinsch served as an adjunct associate professor at the University of Maryland's School of Public Policy and, earlier, its University College Graduate School of Management and Technology, teaching a course in international trade and trade policy. He is also a member of the boards of the Executive Council on Diplomacy and

the Center for International Private Enterprise (CIPE). Vice Chairman Reinsch's publications include "Why China Matters to the Health of the U.S. Economy," published in *Economics and National Security*; "The Role and Effectiveness of U.S. Export Control Policy in the Age of Globalization" and "Export Controls in the Age of Globalization," both published in *The Monitor*. In addition, Vice Chairman Reinsch has published "Should Uncle Sam Control U.S. Technology Exports," published in *Insight* magazine; "Encryption Policy Strikes a Balance," published in the *Journal of Commerce*, and "Building a New Economic Relationship with Japan," published with others in *Beyond the Beltway: Engaging the Public in U.S. Foreign Policy*.

Carolyn Bartholomew

Carolyn Bartholomew was reappointed to the Commission by House Democratic Leader Nancy Pelosi for a seventh term expiring on December 31, 2015. She previously served as the Commission's Chairman for the 2007 and 2009 Report cycles and served as Vice Chairman for the 2010, 2008, and 2006 Report cycles.

Commissioner Bartholomew has worked at senior levels in the U.S. Congress, serving as counsel, legislative director, and chief of staff to now House Democratic Leader Nancy Pelosi. She was a professional staff member on the House Permanent Select Committee on Intelligence and also served as a legislative assistant to then U.S. Representative Bill Richardson.

In these positions, Commissioner Bartholomew was integrally involved in developing U.S. policies on international affairs and security matters. She has particular expertise in U.S.-China relations, including issues related to trade, human rights, and the proliferation of weapons of mass destruction. Ms. Bartholomew led efforts in the establishment and funding of global AIDS programs and the promotion of human rights and democratization in countries around the world. She was a member of the first Presidential Delegation to Africa to Investigate the Impact of HIV/AIDS on Children and a member of the Council on Foreign Relations' Congressional Staff Roundtable on Asian Political and Security Issues.

In addition to U.S.-China relations, her areas of expertise include terrorism, trade, proliferation of weapons of mass destruction, human rights, U.S. foreign assistance programs, and international environmental issues. She is a consultant to non-profit organizations and also serves on the board of directors of the Kaiser Aluminum Corporation and the nonprofit organization Asia Catalyst. Commissioner Bartholomew received a Bachelor of Arts degree from the University of Minnesota, a Master of Arts in Anthropology from Duke University, and a Juris Doctorate from Georgetown University Law Center. She is a member of the State Bar of California.

Peter Brookes

Commissioner Brookes was reappointed to the Commission by House Republican Leader John Boehner for a term expiring December 31, 2014. Commissioner Brookes served in the George W. Bush Administration as the Deputy Assistant Secretary of Defense for Asian and Pacific Affairs. Prior to joining the Bush Administra-

tion, Commissioner Brookes was a Professional Staff Member with the Committee on International Relations in the U.S. House of Representatives. Before his service in the Congress, Commissioner Brookes worked in the Central Intelligence Agency, for the State Department at the United Nations, and in the private sector.

Now, Commissioner Brookes is a Senior Fellow at The Heritage Foundation and works to develop and communicate the Foundation's stance on foreign policy and national security affairs through media appearances, research, published articles, congressional testimony, and speaking engagements.

Commissioner Brookes is a decorated military veteran, having served on active duty with the U.S. Navy in Latin America, Asia, and the Middle East. Dr. Brookes is a graduate of Georgetown University, The Johns Hopkins University, the Defense Language Institute, the Naval War College, and U.S. Naval Academy.

Robin Cleveland

Commissioner Cleveland was reappointed by Senate Republican Leader Mitch McConnell for a third term expiring December 31, 2014. After three decades of government service, Commissioner Cleveland is now serving as the Executive Director of the Office of Student Life at the Graduate School of Education and Human Development at The George Washington University. Having received her Masters degree in school counseling, Ms. Cleveland also is pursuing her doctorate as a counselor educator. Previously, Commissioner Cleveland worked for U.S. Senator Mitch McConnell in a number of positions in his personal office, on the Senate Select Committee on Intelligence, the Foreign Relations Committee, and the Senate Appropriations Committee. In addition, Commissioner Cleveland served as the Counselor to the President of the World Bank, and as the Associate Director of the Office of Management and Budget in the Executive Office of the President. During her tenure serving President Bush, Commissioner Cleveland co-led the interagency effort to develop and operationalize two Presidential initiatives: the Millennium Challenge Corporation and the President's Emergency Plan for AIDS Relief. These efforts reflect her commitment to link policy, performance, and resource management.

Commissioner Cleveland graduated from Wesleyan University with honors and received her M.A. in Education and Human Development from The George Washington University.

Jeffrey L. Fiedler

Commissioner Fiedler was reappointed to the Commission by House Democratic Leader Nancy Pelosi for a fifth term expiring December 31, 2015. He is Assistant to the General President, and Director, Special Projects and Initiatives, for the International Union of Operating Engineers. Previously, he was President of Research Associates of America (RAA) and the elected president of the Food and Allied Service Trades Department, AFL-CIO ("FAST"). This constitutional department of the AFL-CIO represented ten unions with a membership of 3.5 million in the United States and Canada. The focus of RAA, like FAST before it, was organizing and bargaining research for workers and their unions.

He served as a member of the AFL–CIO Executive Council committees on International Affairs, Immigration, Organizing, and Strategic Approaches. He also served on the board of directors of the Consumer Federation of America and is a member of the Council on Foreign Relations. In 1992, Mr. Fiedler co-founded the Laogai Research Foundation (LRF), an organization devoted to studying the forced labor camp system in China. When the foundation’s executive director, Harry Wu, was detained in China in 1995, Mr. Fiedler coordinated the campaign to win his release. He no longer serves as director of the LRF.

Mr. Fiedler has testified on behalf of the AFL–CIO before the Senate Foreign Relations Committee and the House International Affairs Committee and its various subcommittees, as well as the Trade Subcommittee of the House Ways and Means Committee concerning China policy. He attended three of the American Assembly conferences on China sponsored by Columbia University and has participated in a Council on Foreign Relations task force and study group on China. He has been interviewed on CBS, NBC, ABC, CNN, and CNBC on China policy, international trade issues, human rights, and child labor.

A Vietnam veteran, he served with the U.S. Army in Hue in 1967–68. He received his B.A. in Political Science from Southern Illinois University. He is married with two adult children and resides in Virginia.

The Honorable Carte P. Goodwin

Senator Carte P. Goodwin was appointed to the Commission by Senate Majority Leader Harry Reid for a second term expiring on December 31, 2015. He is an attorney with the Charleston, West Virginia, law firm of Goodwin & Goodwin, LLP. His practice includes commercial litigation, appellate advocacy, and intellectual property.

In July 2010, West Virginia Governor Joe Manchin III appointed Senator Goodwin to the United States Senate to fill the vacancy caused by the passing of Senator Robert C. Byrd, where he served until a special election was held to fill the remainder of Senator Byrd’s unexpired term.

From 2005 to 2009, Senator Goodwin served four years as General Counsel to Governor Manchin, during which time he also chaired the Governor’s Advisory Committee on Judicial Nominations. In addition, Senator Goodwin chaired the West Virginia School Building Authority and served as a member of the State Consolidated Public Retirement Board. Following his return to private practice in 2009, Senator Goodwin was appointed to chair the Independent Commission on Judicial Reform, along with former Supreme Court Justice Sandra Day O’Connor, which was tasked with evaluating the need for broad systemic reform to West Virginia’s judicial system.

Senator Goodwin also previously worked as a law clerk for the Honorable Robert B. King of the United States Court of Appeals for the Fourth Circuit. A native of Mt. Alto, West Virginia, Senator Goodwin received his Bachelor of Arts degree in Philosophy from Marietta College in Marietta, Ohio, in 1996 and received his Doctor

of Law degree from the Emory University School of Law, graduating Order of the Coif in 1999.

Senator Goodwin currently resides in Charleston, West Virginia, with his wife, Rochelle; son, Wesley Patrick; and daughter, Anna Vail.

Daniel M. Slane

Daniel Slane was reappointed to the Commission by Speaker of the House John Boehner for a fourth term expiring on December 31, 2015. Commissioner Slane served as the Commission's Chairman for the 2010 Report cycle and as Vice Chairman for the 2011 Report cycle.

Commissioner Slane served for two years on active duty as a U.S. Army Captain in Military Intelligence; in addition, he served for a number of years as a Case Officer with the U.S. Central Intelligence Agency. Commissioner Slane worked in the White House during the Ford Administration.

In 1996, Commissioner Slane became a member of the board of trustees of The Ohio State University and was chairman from 2005 to 2006. The Ohio State University is the nation's largest university, with an annual budget of over \$4 billion. He is also the former chairman of University Hospital, a 1,000-bed regional hospital in Columbus, and the former chairman of the James Cancer Hospital, a National Cancer Institute Comprehensive Cancer Center. Commissioner Slane serves on the board of two financial institutions and a number of nonprofit organizations.

Commissioner Slane is the founder and co-owner of the Slane Company, whose principal business includes real estate development, lumber, and furniture. He has extensive international business experience, including operating a business in China. Prior to becoming a member of the Commission, Commissioner Slane manufactured plywood and related wood products at factories in Harbin, Dalian, and Balu (Pizhou), China. In 2007, he sold his interest in that company.

Commissioner Slane received a Bachelor of Science in Business Administration and a Juris Doctorate from The Ohio State University. He holds a master's degree in International Law from the Europa Institute at the University of Amsterdam in The Netherlands. Commissioner Slane is a member of the Ohio Bar and was formerly a partner in the law firm of Grieser, Schafer, Blumenstiel, and Slane.

The Honorable James M. Talent

Senator Jim Talent was appointed by Senate Republican Leader Mitch McConnell for a second term expiring December 31, 2015. Senator Talent is a national security leader who specializes in issues related to the Department of Defense. He has been active in Missouri and national public policy for over 25 years.

Senator Talent's public service began in 1984, when at the age of 28 he was elected to the Missouri House of Representatives where he served eight years, the last four as the Republican leader in the Missouri House.

In 1992, he was elected to the first of four terms in the U.S. House of Representatives, where he represented Missouri's Second Congressional District. During his eight years in the U.S. House of Representatives, Senator Talent co-authored the historic welfare reform bill, championed national security issues on the House Armed Services Committee, and enacted legislation to help revitalize distressed neighborhoods, both urban and rural. He was the chairman of the House Small Business Committee from 1997–2001, where he worked on regulatory reform issues and on legislation to lower health care costs for small business people and their employees. Under Senator Talent's leadership, the Small Business Committee became one of the most prolific and bipartisan in the House of Representatives, passing numerous bills without a single dissenting vote.

In 2002, Missourians elected Senator Talent to serve in the United States Senate, where he worked with Republicans and Democrats to enact critical legislation for Missouri. He served on the Senate Armed Services, Energy and Natural Resources, and Agriculture committees. Working with Oregon Democrat Ron Wyden, Senator Talent was successful in securing critical funding through construction bonding in the highway bill. He and Senator Dianne Feinstein (D-CA) succeeded in passing the most comprehensive anti-methamphetamine bill ever enacted into law. Senator Talent was a leader on energy issues and was instrumental in the passage of the renewable fuel standard.

After leaving the Senate in 2007, Senator Talent joined The Heritage Foundation as a Distinguished Fellow specializing in military affairs and conservative solutions to poverty. In 2008, he served as Vice Chairman of the Commission on Prevention of Weapons of Mass Destruction Proliferation and Terrorism. In 2010, he served on the independent panel that reviewed the Quadrennial Defense Review of the Department of Defense. He also served on the independent panel that reviewed the Quadrennial Defense Review of 2014. He also has been a member of the executive panel advising the Chief of Naval Operations. Senator Talent was the first national figure outside Massachusetts to endorse Governor Mitt Romney for president in 2007 and was Governor Romney's senior policy advisor in both the 2008 and 2012 campaigns for president.

Senator Talent is an attorney. He earned his B.A. from Washington University in St. Louis and his J.D. from the University of Chicago Law School.

The Honorable Katherine C. Tobin, Ph.D.

Dr. Katherine Tobin was appointed to the U.S.-China Economic and Security Review Commission by Senate Majority Leader Harry Reid in December 2012 for a two-year term expiring December 31, 2014. Dr. Tobin has 15 years of experience as a business manager, market researcher, and consultant in corporate America at institutions including the Hewlett-Packard Corporation, IBM, and Catalyst. She also has worked for 15 years as a university faculty member and administrator.

In 2009, Dr. Tobin was appointed by President Obama as Deputy Assistant Secretary for Performance Improvement at the U.S. Department of Education. She focused on strengthening the Depart-

ment's capacity to work more effectively with its political and educational partners at the national, state, and local levels.

In 2006, Dr. Tobin was appointed by President George W. Bush and served three years as a member of the Board of Governors of the U.S. Postal Service. Dr. Tobin provided strategic vision to the executive team, helped direct and control expenditures, reviewed business practices, conducted long-range planning, and set policies on all postal matters. She also chaired the Board's Audit and Finance Committee at a critical time, when, due to Congress's 2006 legislation, the U.S. Postal Service needed to strengthen its organizational and financial controls to become compliant by 2010 with the Sarbanes-Oxley Act.

During her years at Hewlett-Packard, Dr. Tobin worked in the Corporation's Computer Systems Division and the Systems Technology Division, which were responsible for developing mini-computer systems purchased around the world for business, medical, and scientific usage. Dr. Tobin worked closely with R&D and marketing teams early in the product development life cycle to ensure that customer needs were clearly understood and translated into engineering and market specifications.

Working as a consultant with IBM's senior leaders, Dr. Tobin conducted research on the corporation's values across all its global operations, institutional brand awareness and preference, distribution channels management, and the creation of a new business plan for IBM's Global Financing business.

Dr. Tobin earned a Ph.D. and Master of Arts degree from Stanford University. She earned a Master of Arts degree in Teaching from the University of Massachusetts and a Bachelor of Arts in English from Skidmore College.

Michael R. Wessel

Commissioner Michael R. Wessel, an original member of the U.S.-China Economic and Security Review Commission, was reappointed by House Democratic Leader Nancy Pelosi for a seventh term expiring on December 31, 2014.

Commissioner Wessel served on the staff of former House Democratic Leader Richard Gephardt for more than two decades, leaving his position as general counsel in March 1998. In addition, Commissioner Wessel was Congressman Gephardt's chief policy advisor, strategist, and negotiator. He was responsible for the development, coordination, management, and implementation of the Democratic leader's overall policy and political objectives, with specific responsibility for international trade, finance, economics, labor, and taxation.

During his more than 20 years on Capitol Hill, Commissioner Wessel served in a number of positions. As Congressman Gephardt's principal Ways and Means aide, he developed and implemented numerous tax and trade policy initiatives. He participated in the enactment of every major trade policy initiative from 1978 until his departure in 1998. In the late 1980s, he was the executive director of the House Trade and Competitiveness Task Force, where he was responsible for the Democrats' trade and competitiveness agenda as well as overall coordination of the Omnibus Trade and Competitiveness Act of 1988.

Commissioner Wessel was intimately involved in the development of comprehensive tax reform legislation in the early 1980s and every major tax bill during his tenure. Beginning in 1989, he became the principal advisor to the Democratic leadership on economic policy matters and served as tax policy coordinator to the 1990 budget summit. In 1995, he developed the Ten Percent Tax Plan, a comprehensive tax reform initiative that would enable roughly four out of five taxpayers to pay no more than a 10 percent rate in federal income taxes, the principal Democratic tax reform alternative.

In 1988, he served as national issues director for Congressman Gephardt's presidential campaign. During the 1992 presidential campaign, he assisted the Clinton presidential campaign on a broad range of issues and served as a senior policy advisor to the Clinton Transition Office. In 2004, he was a senior policy advisor to the Gephardt for President Campaign and later co-chaired the Trade Policy Group for the Kerry presidential campaign. In 2008, he was publicly identified as a trade and economic policy advisor to the Obama presidential campaign.

He has coauthored a number of articles with Congressman Gephardt and a book, *An Even Better Place: America in the 21st Century*. Commissioner Wessel served as a member of the U.S. Trade Deficit Review Commission in 1999–2000, a congressionally created commission charged with studying the nature, causes, and consequences of the U.S. merchandise trade and current account deficits.

Today, Commissioner Wessel is President of The Wessel Group Incorporated, a public affairs consulting firm offering expertise in government, politics, and international affairs. He was formerly the Executive Vice President at the Downey McGrath Group, Incorporated. Commissioner Wessel is a member of the board of directors of Goodyear Tire and Rubber. Commissioner Wessel holds a Bachelor of Arts and a Juris Doctorate from The George Washington University. He is a member of the Bars of the District of Columbia and of Pennsylvania and is a member of the Council on Foreign Relations. He and his wife Andrea have four children.

Larry M. Wortzel, Ph.D.

Larry Wortzel was reappointed by Speaker of the House John Boehner for a seventh term expiring on December 31, 2014. He has served on the Commission since November 2001 and the Commission's Chairman for the 2006 and 2008 Report cycles. A leading authority on China, Asia, and national security, Commissioner Wortzel had a distinguished thirty-two year career in the U.S. Armed Forces. Following three years in the Marine Corps, Commissioner Wortzel enlisted in the U.S. Army in 1970. His assignment with the Army Security Agency took him to Thailand, where he focused on Chinese military communications in Vietnam and Laos. Within three years, he had graduated from the Infantry Officer Candidate School and the Airborne and Ranger schools.

After four years as an infantry officer, Commissioner Wortzel shifted to military intelligence. Commissioner Wortzel traveled regularly throughout Asia while serving in the U.S. Pacific Command's intelligence center from 1978 to 1982. The following year,

he attended the National University of Singapore, where he studied advanced Chinese and traveled in China and Southeast Asia. He next worked for the Under Secretary of Defense for Policy, developing counterintelligence programs to protect emerging defense technologies from foreign espionage. Also, the Commissioner was active in programs to gather foreign intelligence for the Army Intelligence and Security Command.

From 1988 to 1990, Commissioner Wortzel was the Assistant Army Attaché at the U.S. Embassy in Beijing, China. After assignments on the Department of the Army staff, he returned to China in 1995 as the army attaché. In these assignments he represented U.S. defense interests in China and traveled around the country observing and reporting on military and political events for the U.S. government.

In December 1997, Commissioner Wortzel joined the faculty of the U.S. Army War College as Director of the Strategic Studies Institute. Concurrently he was professor of Asian studies. He retired from the army as a colonel at the end of 1999. After retirement Commissioner Wortzel continued to be active in defense and Asia-related policy matters. Commissioner Wortzel's books include *Class in China: Stratification in a Classless Society*; *China's Military Modernization: International Implications*; *Dictionary of Contemporary Chinese Military History*; and *The Dragon Extends its Reach: Chinese Military Power Goes Global*.

A graduate of the Armed Forces Staff College and the U.S. Army War College, Commissioner Wortzel earned his Bachelor of Arts degree from Columbus College, Georgia, and his Master of Arts and Doctor of Philosophy degrees from the University of Hawaii. He and his wife live in Williamsburg, Virginia.

Michael R. Danis, Executive Director

Formerly served as a senior intelligence officer with the Defense Intelligence Agency. Mr. Danis managed the agency's technology transfer division, the U.S. government's sole analytical entity tasked with producing intelligence assessments regarding all aspects of foreign acquisition of U.S.-controlled technology and high-tech corporations. He also established and led a unique team of China technology specialists producing assessments on China's military-industrial complex and the impact of U.S. export-controlled and other foreign technology on Chinese weapons development programs. While serving in the U.S. Air Force, Mr. Danis was twice temporarily assigned to the office of the defense attaché in Beijing.

APPENDIX III

PUBLIC HEARINGS OF THE COMMISSION

Full transcripts and written testimonies are available online at the Commission's website: www.uscc.gov .

January 30, 2014: Public Hearing on “China’s Military Modernization and its Implications for the United States” Washington, DC

Commissioners present: Hon. Dennis C. Shea, Chairman; Hon. William A. Reinsch, Vice Chairman; Peter Brookes; Hon. Carte P. Goodwin; Daniel M. Slane; Hon. James M. Talent (Hearing Co-Chair); Hon. Katherine C. Tobin (Hearing Co-Chair); Michael R. Wessel; Larry M. Wortzel.

Witnesses: Jesse Karotkin, Office of Naval Intelligence; Donald L. Fuell, National Air and Space Intelligence Center; Andrew Erickson, U.S. Naval War College; James Lewis, Center for Strategic and International Studies; Mark Stokes, Project 2049 Institute; Roger Cliff, Atlantic Council; David Gompert, RAND Corporation; Thomas Donnelly, American Enterprise Institute.

February 21, 2014: Public Hearing on “U.S.-China Economic Challenges” Washington, DC

Commissioners present: Hon. Dennis C. Shea, Chairman; Hon. William A. Reinsch, Vice Chairman; Carolyn Bartholomew; Peter Brookes; Jeffrey L. Fiedler; Daniel M. Slane (Hearing Co-Chair); Michael R. Wessel (Hearing Co-Chair); Larry M. Wortzel.

Witnesses: Robert E. Scott, Economic Policy Institute; Oded Shenkar, Ohio State University; Peter K. Schott, Yale University; Elizabeth J. Drake, Stewart and Stewart; Philip I. Levy, The Chicago Council on Global Affairs; Eileen P. Bradner, Nucor Public Affairs, Inc. for Daniel R. DiMicco, Nucor Corporation; Willy C. Shih, Harvard Business School; Joel Backaler, Frontier Strategy Group; Adam Hersh, Center for American Progress.

March 13, 2014: Public Hearing on “China and the Evolving Security Dynamics in East Asia” Washington, DC

Commissioners present: Hon. Dennis C. Shea, Chairman; Hon. William A. Reinsch, Vice Chairman; Peter Brookes (Hearing Co-Chair); Robin Cleveland; Jeffrey L. Fiedler (Hearing Co-Chair); Hon. Carte P. Goodwin; Daniel M. Slane; Hon. James M. Talent; Hon. Katherine C. Tobin; Michael R. Wessel.

Witnesses: Robert Sutter, George Washington University; Bonnie Glaser, Center for Strategic and International Studies; James Schoff, Carnegie Endowment for International Peace; Jennifer Lind, Dartmouth College; Walter Lohman, Heritage Foundation; Ely Ratner, Center for a New American Security.

**April 3, 2014: Public Hearing on “China’s Healthcare Sector, Drug Safety, and the U.S.-China Trade in Medical Products”
Washington, DC**

Commissioners present: Hon. Dennis C. Shea, Chairman (Hearing Co-Chair); Hon. William A. Reinsch, Vice Chairman (Hearing Co-Chair); Jeffrey L. Fiedler; Hon. Carte P. Goodwin; Daniel M. Slane; Hon. James M. Talent; Hon. Katherine C. Tobin; Michael R. Wessel.

Witnesses: Christopher J. Hickey, U.S. Food and Drug Administration; Karen Eggleston, Stanford University; Yanzhong Huang, Council on Foreign Relations; Xiaoqing Lu Boynton, Albright Stonebridge Group; Benjamin Shobert, Rubicon Strategy Group; Rod Hunter, PhRMA; Ralph Ives, AdvaMed; Allan Coukell, The Pew Charitable Trusts; Charles Bell, Consumers Union; Ginger Zhe Jin, University of Maryland; Roger Bate, American Enterprise Institute.*

**April 25, 2014: Public Hearing on “U.S.-China Clean Energy Cooperation: Status, Challenges, and Opportunities”
Washington, DC**

Commissioners present: Hon. Dennis C. Shea, Chairman; Hon. William A. Reinsch, Vice Chairman; Peter Brookes; Robin Cleveland (Hearing Co-Chair); Jeffrey L. Fiedler; Hon. Carte P. Goodwin (Hearing Co-Chair); Daniel M. Slane; Hon. James M. Talent; Hon. Katherine C. Tobin; Michael R. Wessel; Larry M. Wortzel.

Witnesses: Leocadia Zak, U.S. Trade and Development Agency; Joanna Lewis, Georgetown University; Sarah Forbes, World Resources Institute; Jane Nakano, Center for Strategic and International Studies; Jerald J. Fletcher, West Virginia University; Valerie Karplus, Massachusetts Institute of Technology; Huei Peng, University of Michigan.

**May 15, 2014: Public Hearing on “Stability in China: Lessons from Tiananmen and Implications for the United States”
Washington, DC**

Commissioners present: Hon. Dennis C. Shea, Chairman; Hon. William A. Reinsch, Vice Chairman; Carolyn Bartholomew (Hearing Co-Chair); Peter Brookes; Robin Cleveland; Jeffrey L. Fiedler; Hon. Carte P. Goodwin; Daniel M. Slane; Hon. James M. Talent; Hon. Katherine C. Tobin; Michael R. Wessel; Larry M. Wortzel (Hearing Co-Chair).

Congressional Perspectives: Hon. Frank Wolf, U.S. Representative from the state of Virginia.

Witnesses: Joseph Fewsmith, Boston University; Xiao Qiang, University of California–Berkeley; Steve Hess, University of Bridgeport; Murray Scot Tanner, CNA; Sophie Richardson, Human Rights Watch; Carl Minzner, Fordham University; Sarah Cook, Freedom House; Delphine Halgand, Reporters Without Borders; David Wertime, Foreign Policy.

**June 5, 2014: Public Hearing on “Recent Developments in
China’s Relations with Taiwan and North Korea”
Washington, DC**

Commissioners present: Hon. Dennis C. Shea, Chairman; Hon. William A. Reinsch, Vice Chairman; Peter Brookes; Daniel M. Slane (Hearing Co-Chair); Hon. Katherine C. Tobin (Hearing Co-Chair); Michael R. Wessel.

Witnesses: Rupert Hammond-Chambers, U.S.-Taiwan Business Council; Vincent Wei-cheng Wang, University of Richmond; JoAnn Fan, The Brookings Institution; William Murray, U.S. Naval War College; Ian Easton, Project 2049 Institute; David Firestein, EastWest Institute; Stephanie Kleine-Ahlbrandt, U.S. Institute of Peace; Sue Mi Terry, Columbia University; Joseph DeTrani, Intelligence and National Security Alliance.

*Submitted material for the record.

APPENDIX IIIA
LIST OF WITNESSES TESTIFYING BEFORE
THE COMMISSION
2014 Hearings

Full transcripts and written testimonies are available online at the Commission's website: www.uscc.gov .

Alphabetical Listing of Panelists Testifying before the USCC

Panelist Name	Panelist Affiliation	USCC Hearing
Backaler, Joel	Frontier Strategy Group	February 21, 2014
Bate, Roger *	American Enterprise Institute	April 3, 2014
Bell, Charles	Consumers Union	April 3, 2014
Boynnton, Xiaoqing Lu	Albright Stonebridge Group	April 3, 2014
Bradner, Eileen P. (for Daniel R. DiMicco, Nucor Corporation)	Nucor Public Affairs, Inc.	February 21, 2014
Cliff, Roger	Atlantic Council	January 30, 2014
Cook, Sarah	Freedom House	May 15, 2014
Coukell, Allan	The Pew Charitable Trusts	April 3, 2014
DeTrani, Joseph	Intelligence and National Security Alliance	June 5, 2014
Donnelly, Thomas	American Enterprise Institute	January 30, 2014
Drake, Elizabeth J.	Stewart and Stewart	February 21, 2014
Easton, Ian	Project 2049 Institute	June 5, 2014
Eggleston, Karen	Stanford University	April 3, 2014
Erickson, Andrew	U.S. Naval War College	January 30, 2014
Fan, JoAnn	The Brookings Institution	June 5, 2014
Fewsmith, Joseph	Boston University	May 15, 2014
Firestein, David	EastWest Institute	June 5, 2014
Fletcher, Jerald J.	West Virginia University	April 25, 2014
Forbes, Sarah	World Resources Institute	April 25, 2014

Alphabetical Listing of Panelists Testifying before the USCC
Continued

Panelist Name	Panelist Affiliation	USCC Hearing
Fuell, Donald L.	National Air and Space Intelligence Center	January 30, 2014
Glaser, Bonnie	Center for Strategic and International Studies	March 13, 2014
Gompert, David	RAND Corporation	January 30, 2014
Halgand, Delphine	Reporters Without Borders	May 15, 2014
Hammond-Chambers, Rupert	U.S.-Taiwan Business Council	June 5, 2014
Hersh, Adam	Center for American Progress	February 21, 2014
Hess, Steve	University of Bridgeport	May 15, 2014
Hickey, Christopher J.	U.S. Food and Drug Administration	April 3, 2014
Huang, Yanzhong	Council on Foreign Relations	April 3, 2014
Hunter, Rod	PhRMA	April 3, 2014
Ives, Ralph	AdvaMed	April 3, 2014
Jin, Ginger Zhe	University of Maryland	April 3, 2014
Karplus, Valerie	Massachusetts Institute of Technology	April 25, 2014
Karotkin, Jesse	Office of Naval Intelligence	January 30, 2014
Kleine-Ahlbrandt, Stephanie	U.S. Institute of Peace	June 5, 2014
Levy, Philip I.	The Chicago Council on Global Affairs	February 21, 2014
Lewis, James	Center for Strategic and International Studies	January 30, 2014
Lewis, Joanna	Georgetown University	April 25, 2014
Lind, Jennifer	Dartmouth College	March 13, 2014
Lohman, Walter	Heritage Foundation	March 13, 2014
Minzner, Carl	Fordham University	May 15, 2014
Murray, William	U.S. Naval War College	June 5, 2014
Nakano, Jane	Center for Strategic and International Studies	April 25, 2014
Peng, Huei	University of Michigan	April 25, 2014
Ratner, Ely	Center for a New American Security	March 13, 2014

Alphabetical Listing of Panelists Testifying before the USCC
Continued

Panelist Name	Panelist Affiliation	USCC Hearing
Richardson, Sophie	Human Rights Watch	May 15, 2014
Schoff, James	Carnegie Endowment for International Peace	March 13, 2014
Schott, Peter K.	Yale University	February 21, 2014
Scott, Robert E.	Economic Policy Institute	February 21, 2014
Shenkar, Oded	Ohio State University	February 21, 2014
Shih, Willy C.	Harvard Business School	February 21, 2014
Shobert, Benjamin	Rubicon Strategy Group	April 3, 2014
Stokes, Mark	Project 2049 Institute	January 30, 2014
Sutter, Robert	George Washington University	March 13, 2014
Tanner, Murray Scot	CNA	May 15, 2014
Terry, Sue Mi	Columbia University	June 5, 2014
Wang, Vincent Wei-cheng	University of Richmond	June 5, 2014
Wertime, David	Foreign Policy	May 15, 2014
Wolf, Frank	U.S. Representative from the state of Virginia	May 15, 2014
Xiao, Qiang	University of California, Berkeley	May 15, 2014
Zak, Leocadia	U.S. Trade and Development Agency	April 25, 2014

*Submitted material for the record.

**APPENDIX IV
INTERLOCUTORS' ORGANIZATIONS**

**Asia Fact-Finding Trip
June 2014**

SOUTH KOREA AND AUSTRALIA, JUNE 2014

During the visit of a Commission delegation to South Korea and Australia in June 2014, the delegation met with representatives of the following organizations:

In South Korea

U.S. Government

- U.S. Army Garrison Yongsan
- U.S. Embassy in Seoul

Government of South Korea

- Ministry of Foreign Affairs
- Ministry of National Defense
- Ministry of Trade, Industry and Energy

United Nations

- United Nations Command Military Armistice Commission

Nongovernmental Organizations

- Asia Foundation
- International Crisis Group

Research Organizations

- Asan Institute for Policy Studies
- Kookmin University
- Korea Institute of Science and Technology
- Seoul National University

In Australia

U.S. Government

- U.S. Embassy in Canberra
- U.S. Consulate in Sydney

Government of Australia

- Department of Defense
- Department of Foreign Affairs and Trade

Nongovernmental Organizations

- Australia China Business Council
- Minerals Council of Australia

Private Enterprise

- KPMG

Research Organizations

- Australian National University
- Australian Strategic Policy Institute
- University of Sydney
- University of Technology, Sydney

APPENDIX V
LIST OF RESEARCH MATERIAL
Contracted and Staff Research Reports
Released in 2014

Disclaimer

The reports in this section were prepared at the request of the Commission to support its deliberations. They have been posted to the Commission's website in order to promote greater public understanding of the issues addressed by the Commission in its ongoing assessment of U.S.-China economic relations and their implications for U.S. security, as mandated by P.L. 106-398, P.L. 108-7, P.L. 109-108, and P.L. 110-161. The posting of these reports to the Commission's website does not imply an endorsement by the Commission or any individual Commissioner of the views or conclusions expressed therein.

Contracted Reports

***Trends in U.S.-China Science and Technology Cooperation:
Collaborative Knowledge Production for the Twenty-First
Century?***

Prepared for the USCC by Richard P. Suttmeier
September 2014

<http://origin.www.uscc.gov/sites/default/files/Research/Trends%20in%20US-China%20Science%20and%20Technology%20Cooperation.pdf>

Staff Research Reports and Backgrounders

October Monthly Trade Bulletin

Written by USCC Economic and Trade Analysts
October 2014

http://origin.www.uscc.gov/sites/default/files/Research/October%202014%20Trade%20Bulletin_1.pdf

China Fiscal Policy Revamp Faces Hurdles

Written by USCC Policy Analyst Iacob Koch-Weser
September 2014

http://origin.www.uscc.gov/sites/default/files/Research/Issue%20brief_China%20Fiscal%20Policy%20Revamp%20Faces%20Hurdles.pdf

The RMB's Long Road to Internationalization

Written by USCC Policy Analyst Nargiza Salidjanova
September 2014

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http://origin.www.uscc.gov/sites/default/files/Research/USCC%20Economic%20Issue%20Brief_03.11.14.pdf***March Monthly Trade Bulletin***

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Air Defense Identification Zone Intended to Provide China Greater Flexibility to Enforce East China Sea Claims

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APPENDIX VI

ACRONYMS AND ABBREVIATIONS

ACFTU	All-China Federation of Trade Unions
ACTC	Advanced Coal Technology Consortium
AD	antidumping duty
ADIZ	Air Defense Identification Zone
ADMM+	ASEAN Defense Ministers Meeting Plus
AEW&C	airborne early warning and control
AML	Anti-Monopoly Law (China)
APEC	Asia-Pacific Economic Cooperation
API	active pharmaceutical ingredient
ARATS	Association for Relations Across the Taiwan Strait
ASAT	antisatellite
ASEAN	Association of Southeast Asian Nations
ASW	antisubmarine warfare
AQSIQ	General Administration of Quality Supervision, Inspection, and Quarantine
BCIM	Bangladesh, China, India, and Myanmar
BIT	bilateral investment treaty
BRICS	Brazil, Russia, India, China, and South Africa
C4ISR	command, control, communications, computers, intelligence, surveillance, and reconnaissance
CAS	Chinese Academy of Sciences
CCDI	Central Commission for Discipline Inspection
CCP	Chinese Communist Party
CCS	carbon capture and storage
CCTV	China Central Television
CDC	Center for Disease Control and Prevention
CDHA	Canadian Drug and Health Agency
CEP	Circular Error Probable
CERC	U.S.-China Clean Energy Research Center
CFDA	China Food and Drug Administration
CICA	Conference on Interaction and Confidence Building Measures in Asia
CMC	Central Military Commission
CMD	Central Military Dock
CMS	Cooperative Medical Scheme
CNPC	China National Petroleum Corporation
CO₂	carbon dioxide
CPPCC	Chinese People's Political Consultative Conference
CRHK	Commercial Radio Hong Kong
CSR	China South Locomotive & Rolling Stock Corporation Ltd.
CSRC	China Securities Regulatory Commission
CSSTA	Cross-Strait Services Trade Agreement

CUES	Code for Unplanned Encounters at Sea
CVC	Clean Vehicles Consortium
CVD	countervailing duty
CZSPL	Changzhou Scientific Laboratories
DDG	guided-missile destroyer
DDoS	distributed denial-of-service
DLA	(Sino-British) Defense Land Agreement
DoD	U.S. Department of Defense
DOE	U.S. Department of Energy
DD	destroyer
DPP	Democratic Progressive Party (Taiwan)
DQSA	Drug Quality and Security Act
ECFA	Economic Cooperation Framework Agreement
ECP	U.S.-China Energy Cooperation Program
EDL	Essential Drug List
EEZ	exclusive economic zone
EIA	U.S. Energy Information Administration
ELINT	electronic intelligence
ETIM	East Turkestan Islamic Movement
EU	European Union
EVA	economic value-added
FAC	Foreign Affairs Committee (United Kingdom)
FCCC	Foreign Correspondents Club of China
FDA	U.S. Food and Drug Administration
FDASIA	Food and Drug Administration Safety and Innovation Act
FDI	foreign direct investment
FF	frigate
FFG	guided-missile frigate
FTA	free trade agreement
FTZ	free trade zone
GAO	U.S. Government Accountability Office
GDP	gross domestic product
GIP	Good Importer Practices
GMP	good manufacturing practices
GPA	Agreement on Government Procurement
GSK	GlaxoSmithKline
GW	gigawatt
H7N9	avian influenza
HA/DR	humanitarian assistance/disaster relief
HHS	U.S. Health and Human Services
HKBA	Hong Kong Bar Association
HKJA	Hong Kong Journalists Association
HKSAR	Hong Kong Special Administration Region
ICAO	International Civil Aviation Organization
ICCPR	International Covenant on Civil and Political Rights
ICH	International Conference on Harmonization
ICT	information and communication technology
IMF	International Monetary Fund
IP	intellectual property
ISR	intelligence, surveillance, and reconnaissance
ITA	Information Technology Agreement
	U.S. International Trade Administration
ITC	U.S. International Trade Commission

ITEC	Interagency Trade Enforcement Center
JASDF	Japan Air Self-Defense Force
JCCT	Joint Commission on Commerce and Trade
JMSDF	Japan Maritime Self-Defense Force
JSDF	Japan Self-Defense Forces
KAMD	Korean Air and Missile Defense
KMT	Kuomintang (Taiwan)
LCD	liquid crystal display
LegCo	Legislative Council (Hong Kong)
LLC	limited liability corporation
LPD	amphibious transport dock
MAC	Mainland Affairs Council (Taiwan)
MFN	most-favored nation
MICA	Military Installations Closed Area
MIIT	Ministry of Industry and Information Technology (China)
MIRV	multiple independently targetable reentry vehicles
MOFCOM	Ministry of Commerce (China)
MOH	Ministry of Health (China)
MOHURD	Ministry of Housing and Urban and Rural Development (China)
MOST	Ministry of Science and Technology (China)
MOU	Memorandum of Understanding
MPS	Ministry of Public Security (China)
MRI	magnetic resonance imaging
MSS	Ministry of State Security (China)
NATO	North Atlantic Treaty Organization
NAO	National Audit Office (China)
NASIC	U.S. National Air and Space Intelligence Center
NBE	New Biological Entity
NCE	New Chemical Entity
NCMS	New Cooperative Medical Scheme
NDRC	National Development and Reform Commission (China)
NEA	National Energy Administration (China)
NGO	nongovernmental organization
nm	nautical mile
NME	non-market economy
NOTAM	Notice to Airmen
NPC	National People's Congress (China)
NPCSC	Standing Committee of the National People's Congress (China)
NRDL	National Reimbursement Drug List
OECD	Organization for Economic Cooperation and Development
ONI	U.S. Office of Naval Intelligence
PACOM	U.S. Pacific Command
PAP	People's Armed Police
PBOC	People's Bank of China
PIIE	Peterson Institute for International Economics
PLA	People's Liberation Army
PNTR	permanent normal trade relations
PRC	People's Republic of China
PMI	Purchasing Managers' Index

PTG	guided-missile patrol boats
PX	paraxylene
R&D	research and development
RCEP	Regional Comprehensive Economic Partnership
RIMPAC	Rim of the Pacific
RMB	renminbi
RRR	required reserve ratio
RTL	reeducation through labor
S&ED	Strategic and Economic Dialogue
S&T	science and technology
SAIC	State Administration for Industry and Commerce
SARS	severe acute respiratory syndrome
SASAC	State-Owned Assets Supervision and Administration Commission
SCO	Shanghai Cooperation Organization
SEF	Straits Exchange Foundation
SFDA	State Food and Drug Administration (China)
SIGINT	signals intelligence
SIPO	State Intellectual Property Office (China)
SIPRI	Stockholm International Peace Research Institute
SOE	state-owned enterprise
SPL	Scientific Protein Laboratories
sqnm	square nautical mile
SS	diesel attack submarine
SSBN	nuclear ballistic missile submarine
SSGN	guided-missile, nuclear powered submarine
SSN	nuclear attack submarine
SSP	diesel air-independent attack submarine
TAO	Taiwan Affairs Office (China)
THAAD	Terminal High Altitude Area Defense
TIFA	Trade and Investment Framework Agreement
TIP	Turkestan Islamic Party
TiSA	Trade in Services Agreement
TMP	Technology Management Plan
TPP	Trans-Pacific Partnership
TPR	Trade Policy Review (World Trade Organization)
TRIPS	Trade Related Aspects of Intellectual Property Rights (World Trade Organization)
UAV	unmanned aerial vehicle
UCAV	unmanned combat air vehicle
UDI	Unique Device Identifiers
UEBMI	Urban Employee Basic Medical Insurance (China)
UK	United Kingdom
UN	United Nations
URBMI	Urban Residents Basic Medical Insurance (China)
USCBC	U.S.-China Business Council
USD	U.S. dollar
USTDA	U.S. Trade and Development Agency
USTR	U.S. Trade Representative
VAT	value-added tax
WHO	World Health Organization
WTO	World Trade Organization
WVU	West Virginia University

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