2006
REPORT TO CONGRESS

of the

U.S.-CHINA ECONOMIC AND SECURITY REVIEW COMMISSION

ONE HUNDRED NINTH CONGRESS

SECOND SESSION

NOVEMBER 2006

Printed for the use of the
U.S.-China Economic and Security Review Commission
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The Commission was created on October 30, 2000 by the Floyd D. Spence National Defense Authorization Act for 2001 § 1238, Public Law 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), Public Law 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 Public Law No. 109-108 (H.R. 2862) (Nov. 22, 2005) (regarding responsibilities of Commission and applicability of FACA).

The Commission's full charter http://www.uscc.gov/about/charter.php and Statutory Mandate http://www.uscc.gov/about/overview.php available via the World Wide Web.

Dedication of this Report

OF THE

U.S.-China Economic and Security Review Commission

TO

Commissioner George Becker

2006

This Report is dedicated to our colleague George Becker in honor of his tireless efforts on behalf of the Commission and his life-long devotion, commitment, and dedicated service to his country, and to improving the conditions and fundamental rights of working men and women around the world.

——Commissioners Carolyn Bartholomew, Vice Chairman
Daniel Blumenthal, Peter T.R. Brookes, C. Richard D'Amato
Thomas Donnelly, Kerri Houston, Patrick A. Mulloy
William A. Reinsch, Fred D. Thompson, Michael R. Wessel
and Larry M. Wortzel, Chairman

WASHINGTON : 2006

U.S.-CHINA ECONOMIC AND SECURITY REVIEW COMMISSION

OCTOBER 30, 2006

The Honorable Ted Stevens,
President Pro Tempore of the U.S. Senate, Washington, DC
The Honorable J. Dennis Hastert,
Speaker of the U.S. House of Representatives, Washington, DC

DEAR SENATOR STEVENS AND SPEAKER HASTERT:

On behalf of the U.S.-China Economic and Security Review Commission, we are pleased to transmit the Commission's fourth Annual Report to the Congress, 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." In this report, the Commission reached a broad and bipartisan consensus; it approved the Report unanimously, with all 12 members voting to approve and submit it.

In accordance with our mandate, this report 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, Taipei and the People's Republic of China (including the military modernization and force deployments of the People's Re-

public 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

- **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
- **WORLD TRADE ORGANIZATION COMPLIANCE—**The compliance of the People's Republic of China with its accession agreement to the World Trade Organization (WTO)
- **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 its work through a comprehensive set of eight hearings, taking testimony from over 120 witnesses from the Congress, the executive branch, industry, academia, policy groups, and other experts. It conducted seven of these hearings in Washington, DC and conducted one field hearing in Dearborn, Michigan. For each of its hearings, the Commission produced a transcript (posted on its website—www.uscc.gov) and a letter of transmittal to the Congress containing findings and recommendations. The Commission also received a number of briefings by officials of executive branch agencies, intelligence community agencies, and the armed services, including a full-day briefing by the Commander of the U.S. Strategic Command and his staff at USSTRATCOM Headquarters at Offutt Air Force Base, Nebraska.

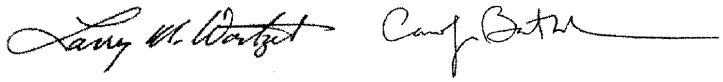
Commissioners also conducted official visits to China, Hong Kong, and Taiwan. In these visits, the Commission delegations met with the official U.S. government representatives, host government officials, representatives of the U.S. and foreign business communities, representatives of American news media, and local experts.

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

The Report includes 44 recommendations for Congressional action. Our ten most important recommendations appear on page 14 at the conclusion of the Executive Summary.

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

Yours truly,



Larry M. Wortzel
Chairman

Carolyn Bartholomew
Vice Chairman

Commissioners Approving the Report

Larry M. Wortzel, Chairman

Carolyn Bartholomew, Vice Chairman

George Becker, Commissioner

Daniel Blumenthal, Commissioner

Peter T. R. Brookes, Commissioner

Thomas Donnelly, Commissioner

C. Richard D'Amato, Commissioner

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Fred Thompson, Commissioner

Michael R. Wessel, Commissioner

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EXECUTIVE SUMMARY

This Report sets forth the Commission's analysis of the U.S.-China relationship in the topical areas designated by the Commission's Congressional mandate: the areas for the Commission to consider and about which it is to make recommendations to the Congress. These include China's proliferation practices; the qualitative and quantitative nature of economic transfers of United States production activities to China; the effect of China's development on world energy supplies; the access to and use of U.S. capital markets by China; China's regional economic and security impacts; U.S.-China bilateral programs and agreements; China's compliance with its accession agreement to the World Trade Organization; and the implications of China's restrictions on freedom of expression. Our analysis, along with recommendations to the Congress for addressing identified concerns, is chronicled in the Report, and summarized herein.

COMMISSION ASSESSMENT OF U.S.-CHINA ECONOMIC AND SECURITY RELATIONS

Congress gave the Commission the overarching mission of evaluating "the national security implications of the bilateral trade and economic relationship between the United States and the People's Republic of China," and reporting its evaluation to Congress annually together with its observations specifically concerning the topical areas listed above. The Commission takes a broad view of "national security" in making its assessment and has attempted to evaluate how the U.S. relationship with China affects the economic health of the United States and its industrial base, the military and weapons proliferation dangers China poses to the United States, and the United States' political standing and influence in Asia.

In its previous three annual reports, the Commission outlined a number of worrisome trends in the economic and security relationship between the United States and China. The Commission's assessment for 2006 is consistent with those past analyses, but this year has employed the notion of a "responsible stakeholder" in the international community—that is, a state that not only observes international norms but works to strengthen those norms—as a measure of Chinese activities. This term has been employed by senior members of the Bush Administration, but the Commission believes that the underlying concept has informed U.S. policy for many years. Unfortunately, no consistent strategy or policy has been formed to achieve these goals. It is the Commission's judgment that, while China's influence is growing as its wealth and power increase, and there remain many reasons to hope that China might in some future day stand as a pillar of the international community, its behavior as yet is far from meeting that standard.

Indeed, many of the trends of the past year raise serious doubts whether China is yet willing or prepared to play such a role.

The Commission further observes that uncertainties about China's role in the world raise serious questions for the United States. No nation has a greater interest in assuring that China's rise to power serves to strengthen the international system than does the United States.

Moreover, the Commission concludes that the matter of China's role as responsible stakeholder is a matter of some urgency: the threats to international security arising from the spread of ethnic conflict; terrorism and weapons of mass destruction; the challenges of a globalized economy; the weaknesses of failed and failing states; concerns over environmental degradation and pandemic diseases that do not recognize boundaries or state sovereignty; and, perhaps most of all, challenges to the legitimacy of democratic forms of governance all place increasing stresses upon the international community. The preservation of peace, prosperity, health, and liberty all require that China contribute to the global public interest rather than continue to pursue its own narrow national interests.

COMMISSION FINDINGS

The Report presents its findings, analyses, and recommendations to Congress in 12 segments organized in six chapters in response to the requirements of the Commission's Congressional mandate. However, the Commission has attempted to take an integrated approach to its assessments, believing that economic, security, and other issues are essentially interrelated. The intersections of U.S. geopolitical, economic, security, diplomatic, and cultural interests form a complex web of concerns that comprise the overall relationship between the United States of America and the People's Republic of China.

The Commission's findings are included in this Executive Summary. At the Summary's conclusion, the Commission's ten key recommendations are listed. The Commission makes a total of 44 recommendations to the Congress in this Report. Those pertaining to each of the six Report chapters appear at the conclusion of the chapter, and a comprehensive list is provided beginning on page 205.

The U.S.-China Trade and Economic Relationship

Although China is increasingly integrated in the global economy, the Commission believes that profound differences remain between the open-market approach of the United States and the managed-trade principles and predatory practices observed by the Chinese government. In particular, China's record of adhering to the obligations it incurred upon its entry into the World Trade Organization has been inconsistent, and it remains an open question whether China will change its domestic practices to observe international trade norms or will continue to bend current norms to suit its domestic practices.

The Commission further recognizes that the Chinese commitment to economic reform, modernization, and liberalization faces formidable handicaps and barriers at home, not the least being the chaos and confusion that stem from China's sheer size and are ex-

acerbated by the long legacy of state control. Nonetheless, China's reluctance to proceed with reforms and its delay in meeting treaty obligations betray contradictions in Chinese policy. China's excessive reliance on export-led growth has created and is deepening fundamental distortions in the Chinese economy, including continued subsidies to state-owned or -controlled enterprises, a seriously undervalued currency, and a financial system hobbled by corruption and bad loans. China has long argued that it is not a "nonmarket economy," but often acts as though it intends to remain one.

Findings

The Status of China's Compliance with its World Trade Organization Obligations and the Impact of China's Industrial Subsidies on U.S. and Other Markets

- China's adherence to its many World Trade Organization (WTO) obligations remains spotty and halting in important areas five years after China attained membership. As a result, U.S. exporters and investors face a variety of non-tariff barriers and major impediments to conducting business in China. In some areas, such as banking reform, China has made progress. But in too many cases, the government has delayed and even backtracked on its obligations.
- China "has not yet fully embraced the key WTO principles of market access, non-discrimination, and national treatment, nor has China fully institutionalized market mechanisms and made its trade regime predictable and transparent . . . [and China] continues to use an array of industrial policy tools . . . to promote or protect favored sectors and industries," according to the U.S. Trade Representative.[1]
- China's failure to enforce intellectual property rights provides a particularly egregious example of its noncompliance with WTO rules. China's refusal to protect copyrights, inventions, brands, and trade secrets has placed it first among nations on the U.S. Trade Representative's "priority watch list" of countries that tolerate intellectual piracy.[2]
- China has a centralized industrial policy that employs a wide variety of tools to promote favored industries. In particular, China has used a range of subsidies to encourage the manufacture of goods meant for export over the manufacture of goods meant for domestic consumption, and to secure foreign investment in the manufacturing sector.
- China artificially lowers the value of its currency to maintain an export-led trade policy. The State Administration for Foreign Exchange accomplishes this by buying dollars and other foreign currency in China at a fixed rate of around 8 renminbi to the dollar. Only small fluctuations in the value of the renminbi are allowed.
- At times, China's central government and governing bodies in the provinces and localities appear to be operating at cross purposes. Decisions by the central government meant to comply with WTO rules sometimes are ignored in the provinces. Regulations established by Beijing are not necessarily enforced elsewhere.

China's Approach to Intellectual Property Rights and its Production of Counterfeit Goods

- Despite its many promises to comply with its international obligations to protect intellectual property, China has failed to deter widespread violations of trademarks, copyrights, and patents. The failure stems from lenient rules and regulations, mild penalties for transgressors, and an overall lack of enforcement. Although the central government has made some effort to pass stricter laws, enforcement at the local and provincial levels lags far behind. Ultimately, the central government is required by its World Trade Organization membership to accept responsibility.
- China's failure to protect intellectual property is a serious problem for U.S. competitiveness. U.S. intellectual property industries contribute to more than half of all U.S. exports and represent 40 percent of U.S. economic growth. While the full extent of loss to U.S. industry due to Chinese intellectual property rights violations is unknown, U.S. industry reports losses totaling billions of dollars. The U.S. Chamber of Commerce estimates that the global intellectual property industry loses $650 billion annually in sales due to counterfeit goods.[3] And some analysts estimate that China is responsible for as much as 70 percent of this counterfeit goods market.[4] Annual losses to the U.S. copyright industries are estimated to be between $2.5 billion and $3.8 billion.[5] And U.S. pharmaceutical industries lose 10 percent to 15 percent of annual revenues in China due to intellectual property infringement.[6]
- The Customs Bureau of the U.S. Department of Homeland Security made 3,709 seizures of counterfeit goods originating from China in fiscal year 2005, totaling $64 million.[7] Total exports of counterfeit goods from China to the United States generally are estimated to be much higher and can be expected to increase even further. Not only is China's enforcement of intellectual property laws weak, but China also has liberalized its strict export licensing regime to allow any business to export. As more businesses begin to export, counterfeit goods will be easier to ship.
- Counterfeit exports from China pose a health and safety threat to U.S. citizens. The World Health Organization reports that counterfeit pharmaceuticals of Chinese origin cost pharmaceutical companies $32 billion a year.[8] Chinese counterfeiters have produced batteries that explode because of faulty manufacturing and engine timing belts that break after only one-fifth the time of the authentic product.[9]
- Counterfeit products account for 15 percent to 20 percent of products made in China and equal eight percent[10] of China's $2.2 trillion[11] gross domestic product (GDP). In some cities, the manufacturers and distributors of counterfeit goods are the major employers and the dominant contributors to the tax base.
- Many local governments in China are so financially dependent on the counterfeit trade that they are reluctant to interfere with the violations, and officials at those levels often profit personally from counterfeiting.
- Several U.S. industries, particularly those dependent on copyright protections, report high piracy rates of their products in

China. For example, the piracy rate for business software has reached 86 percent.[12] In this situation, the WTO dispute settlement mechanism provides the strongest enforcement tool available to the United States government to address China's failure to enforce intellectual property rights.

- Market barriers to American exports to China contribute to the climate of piracy in China. When U.S. companies experience Chinese government censorship, delays, distribution restrictions, or other barriers in getting their products to market, counterfeiters move in first.

China's Financial System and Monetary Policies and their Effects on the United States

- China's financial system is an increasingly important element in Beijing's development strategy and its program to preserve internal stability. China's banks serve the nation's development strategy in several key ways. The banks, which are predominantly state-owned or state-controlled themselves, often are called on to make loans to other state-owned enterprises without attention to creditworthiness, collateral, or other typical lending requirements of banks operating in real market-driven economies. Instead, Chinese banks often are expected to grant low interest loans, carry large amounts of defaulted loans on their books, or forgive such debts held by government-owned companies. In a centrally planned economy such as China's, these loans are a device for subsidizing various activities and specific industries that China's power structure favors. The ultimate goal is to preserve internal stability and strengthen the control of the Chinese Communist Party.
- Serious and potentially crippling problems threaten the financial system in China and render it vulnerable to excessive volatility and collapse. These problems include a large number of defaulted bank loans, an underdeveloped stock and bond market, an immature insurance system, poor accounting practices, and excessive government ownership and control over the economy, including a refusal to let the currency be governed by market forces. China cannot fully develop a free-market system until these problems are substantially resolved.
- A financial crisis in China would harm its economy, decrease China's purchase of U.S. exports, and reduce China's ability to fund U.S. borrowing, particularly to cover the U.S. budget deficit. An economic crisis in China has the potential to raise U.S. interest rates, thereby placing major additional costs on U.S. businesses and individual consumers and producing dislocation in the U.S. economy. It also could exacerbate Chinese domestic political tensions in an unpredictable fashion. This is why the condition of China's financial system is of concern to the United States.
- The Chinese government's deliberate undervaluation of the renminbi makes U.S. products more expensive to Chinese consumers who therefore purchase fewer of them. Conversely, China's undervalued currency also makes Chinese products cheaper in the United States, and therefore U.S. consumers purchase more of them. The combination is a major contributor to the record-high and still-growing U.S. trade deficit. The undervalued

Chinese currency harms American competitiveness and is also a factor encouraging the relocation of U.S. manufacturing overseas while discouraging investments in U.S. exporting industries.

- There has been so little independent regulation of accounting procedures in China that the health of the entire securities and insurance sectors remains questionable. Chinese officials remain highly reluctant to allow independent and objective assessments of the financial system by foreign auditors and credit rating agencies.
- The ownership of U.S. Treasury securities, government agency bonds, and corporate bonds cannot be easily tracked. Foreign holders of U.S. Treasury securities, including foreign central banks, need not disclose their ownership and are not required to do so either by the United States or by international agencies. The lack of accurate data makes it difficult to predict the effect of a sell-off by any one country of dollar-denominated assets.

China's Global and Regional Activities and Other Geostrategic Developments

In recent years, China has begun to exercise diplomatic influence approaching its economic importance. If China's willingness to honor its trade obligations is at issue, its commitment to accept its geopolitical responsibilities is even more in question.

China's impact is felt far beyond East Asia. In the Middle East, in Africa, in South Asia, and in Latin America, China is coming to be regarded almost as a second superpower. Of particular concern to the Commission is China's seeming posture as a potential counterweight to the United States, and its disposition to support volatile and repressive regimes as its client states. China's continuing record of proliferation, including its indulgence of North Korea's nuclear and missile programs and its involvement in Iran's programs, is substantially destabilizing. And China's apparent willingness to value its own energy needs above the needs of international security is indicative of a nation as yet unprepared or unwilling to shoulder the burdens of a stakeholder state.

Findings

China's Regional Activities

- China's stated diplomacy promotes friendly relations with other countries, regional peace and stability, and development of complementary economic cooperation.[13] However, some of China's international relationships, namely those with totalitarian, repressive governments, conflict with U.S. values.
- China's regional activities in Latin America, Africa, and the Middle East and around East Asia are beginning to assume the character of a counterbalancing strategy vis-à-vis the United States. That is, China's support for rogue regimes and anti-American governments and groups in vital regions serves an international purpose: to balance American power, create an alternative model of governance, and frustrate the ability of the international community to uphold its norms.
- China's economic development policies can exacerbate instability in volatile regions. Beijing's export-led growth has magnified

trade imbalances, and complicated and inhibited local economic development strategies, in some instances undermining the ability of governments in those regions to prevent or respond to the rise of terrorist groups.

- China's strategy to isolate Taiwan is manifest in its foreign policy actions around the world, including encouraging other nations to switch their recognition to the People's Republic of China, and preventing Taiwan from participating in international organizations.

China's Proliferation and Involvement in North Korea's and Iran's Nuclearization Activities

- Chinese companies and government organizations continue to proliferate weapons, weapons components, and weapons technology. Some of these transfers violate China's international nonproliferation agreements, harm regional security in East Asia and the Middle East, and are a measure of China's failure to meet the threshold test of international responsibility in the area of nonproliferation. Given strong U.S. interests in both regions, Chinese proliferation threatens U.S. security and potentially could place at risk U.S. troops operating in those regions.
- China possesses the unique ability to influence North Korea's actions, partly because of the great extent to which North Korea depends on it for consistent supplies of food and fuel. Notwithstanding its commendable efforts to persuade North Korea to remain involved in the Six-Party Talks seeking to obtain North Korean agreement to end its nuclear program, China has refused to use its leverage effectively to pressure North Korea to cease its nuclear and missile development activities and, in particular, not to conduct the nuclear test it conducted in October.
- Chinese companies and government organizations continue to assist Iran's missile development program, and have aided Iran's nuclear program. China also has refused to cooperate in the efforts by a number of nations to persuade or force Iran to halt its military nuclear program and instead has offered political and moral support for Iran and obstructionism in the United Nations.
- China's continued frustration of nonproliferation efforts may precipitate additional nuclear proliferation, including nuclear weapons development and transfer of nuclear weapons to non-nuclear nations and terrorists, proliferation of other weapons of mass destruction, and conventional arms races.

China's Energy Needs and Strategies

- China's strategy of securing ownership and control of oil and natural gas assets abroad could substantially affect U.S. energy security—reducing the ability of the global petroleum market to ameliorate temporary and limited petroleum supply disruptions in the United States and elsewhere.
- In 2005, China became the second largest international oil consumer after the United States, with a daily demand of 5.5 million barrels per day.[14] In 2006, China will account for 38 percent of the total growth in world oil demand.[15] The continuation of China's dramatic year-over-year increases of nearly half a million barrels per day (an increase of approximately 16 percent in 2005

and 14 percent in 2006)[16] in petroleum consumption will place growing stress on the world's energy resources and distribution systems, which will affect the supply available to the United States and the cost of that supply.

- China's energy policies, taken as a whole, are not consistent with the economic or geopolitical behavior of a responsible stakeholder; they distort markets and destabilize volatile regions. As China's energy needs and consumption grow, its failure to observe these international norms becomes increasingly problematic.
- The air pollution resulting from China's energy use policies and practices not only is exacting a toll on the health of China's population and ecology, but also is detrimentally affecting the air quality of the western United States.
- In recent years, China has made progress in instituting, codifying, and enforcing environmental standards and controls relating to fuel consumption and has pursued cleaner coal-burning technologies, but still faces a daunting air and water pollution crisis. If China does not address these problems aggressively, it will exacerbate what is already an environmental catastrophe.
- Some U.S. cooperative efforts with China on energy efficiency and environmental friendliness have realized success, offering limited encouragement that the rate of growth of China's energy consumption can be slowed and the environmental consequences of its energy use mitigated. Such results are profoundly in the interest of the United States as well as China.

China's Military Power and Its Effects on American Interests and Regional Security

A consistent theme of previous Reports by the Commission has been the increasing scope and pace of Chinese military modernization. The Commission is concerned that the People's Liberation Army (PLA) may be pursuing a path to project power beyond the immediate needs of defending the mainland. It is becoming a force capable of challenging the U.S. military in the western Pacific and beyond.

The pace of PLA modernization continues to exceed U.S. estimates. The Commission believes that the military balance in East Asia is increasingly favorable to China and increasingly challenging to U.S. interests and allies. The Chinese military's ability to deny access and freedom of operation to U.S. forces, and its further ambitions to project its own military power, are accelerating. In particular, the Commission concludes that Taiwan's ability to defend itself from attack and intimidation is in doubt and that China could impede the United States' ability to intervene successfully in a crisis or conflict.

Findings

China's Military Modernization

- China continues its extensive military modernization program. For the tenth year in a row, China's new annual military budget will reflect double-digit growth over the previous year's. According to Chinese government figures, the 2006 budget will increase

14.7 percent from the previous year to approximately $35 billion. The Department of Defense believes China's actual defense expenditures could be two to three times higher at $70-$105 billion.

- In the near term, among China's principal military modernization aims are to deter Taiwan from moving toward independence; to defeat and occupy Taiwan if it declares independence and to accomplish this before U.S. or other military assistance can arrive; and to deny U.S. forces the ability to intercede effectively in such a conflict and prevent China from prevailing.
- Despite calls for increased transparency, Beijing continues to shroud much of its military structure, activities, and intentions in secrecy, leading to increased chances for misunderstanding and potential conflict.
- China has recognized the profound effectiveness and strategic importance of force multipliers such as advanced command, control, communications, computer, intelligence, surveillance, and reconnaissance (C4ISR) capabilities employed by U.S. forces, and it is exerting great efforts to enhance its C4ISR abilities and integrate them in its military procedures. Once the People's Liberation Army (PLA) achieves these objectives, it will be a much more effective and formidable fighting force.
- China's military intentions beyond Taiwan remain unclear. The PLA understands itself to be in an extended military competition with the United States.
- The PLA's doctrine recognizes that to succeed against a sophisticated potential adversary such as the United States, it must among other things be able to disrupt the adversary's C4ISR advantages through such means as attacking its computer and communications systems. Accordingly, the PLA is establishing information warfare units and capacities, and developing anti-satellite capabilities.
- China is pursuing measures to try to control the seas in the Western Pacific and developing space warfare weapons that would impede U.S. command and control.

The Effect of U.S. and Multilateral Export Controls on China's Military Modernization

- China makes a concerted effort to modernize its military by obtaining military-related systems and technologies from other countries, particularly Russia. China uses legal and illegal means, including espionage, to obtain such technologies from the United States.
- There is only one full-time U.S. export control officer stationed in China to verify that licensed U.S. dual-use items are used in the location and for the purpose for which they are licensed. There also is only one full-time U.S. export control officer stationed in Hong Kong to verify that dual-use items licensed for use there remain in Hong Kong and are used as intended rather than being diverted, possibly to China. As a result, it is impossible to adequately oversee compliance with U.S. export licensing requirements by licensees in China or Hong Kong. This makes it easier for militarily-sensitive U.S. materials and technology to be misused or diverted without detection and without penalty to

the licensees and thereby undermines the credibility of the export control process.

- China, in violation of a U.S.-China agreement, often fails to schedule timely end-use inspection visits of dual-use items licensed for export to China. This frustrates U.S. oversight of compliance with U.S. export licensing requirements by licensees in China, and makes it easier for militarily-sensitive U.S. materials and technology to be misused or diverted without detection and without penalty to the licensees and thereby undermines the credibility of the export control process.
- Export controls are likely to be substantially effective only if they are multilateral, if there are no notable sources of the controlled goods and technologies who choose to disregard the controls, and if all source nations administer and enforce the restrictions effectively. While unilateral controls may delay acquisition of controlled goods and technologies by targeted nations, those delays are unlikely to be significant if a targeted nation is intent on acquisition and if other nations possess and are willing to make available the goods and technologies.
- The memberships of most of the existing multilateral export control regimes have not agreed that China should be a target of their efforts and so do not seek to impede Chinese acquisition of the items and technologies of which they try to facilitate and coordinate control by their member nations. Not surprisingly, therefore, these regimes and their controls play no role in preventing China from acquiring items and technologies the United States believes are militarily-critical. This highlights the fact that effectively controlling the acquisition of items and technologies by a particular nation requires multilateral agreement both that possession of the items and technologies should be controlled and that the nation in question should be a target of the controls.

The Military Balance Across the Taiwan Strait

- The cross-Strait military balance of power currently substantially favors the mainland. China possesses advanced aircraft, submarines, surface vessels, and ballistic missiles, in greater quantities and, in many cases, equal or greater sophistication than Taiwan's. In an all-out conflict between the two, Taiwan, if relying only on its own capabilities, would be unable to prevent China from ultimately realizing its objectives.
- Taiwan is growing increasingly dependent on the threat of intervention from the United States to deter China from initiating hostile action against Taiwan, and on U.S. intervention to survive any attack or invasion China launches.
- The People's Liberation Army (PLA) Navy's surface vessel and submarine force is capable of considerably delaying the arrival of any naval force that might attempt to intervene in a Taiwan crisis and degrading its combat power. However, the lack of an integrated command, control, computer, intelligence, surveillance, and reconnaissance (C4ISR) architecture currently precludes the PLA from effective joint targeting of a carrier battle group.[17]
- There is substantial agreement among experts that a "window of vulnerability" will exist between 2008 and 2015 for U.S. forces

that likely would be involved if the United States made a decision to intervene militarily in a pre-conflict China-Taiwan crisis or in a China-Taiwan conflict. Many of the Chinese modernization programs focused on Taiwan, including weapons systems such as submarines, destroyers, cruise missiles, and maneuverable ballistic missiles, and advances in C4ISR and targeting, will be deployed around or soon after 2008, while some U.S. capabilities to defeat these advances, such as ballistic missile defenses, littoral strike assets, and an integrated anti-submarine warfare network, probably will not become operational until approximately 2015. This will decrease the deterrent effect of the possibility of U.S. intervention in a China-Taiwan conflict, and will increase the cost to the United States of intervening.

- The speed and force with which a U.S. force could respond to a Taiwan crisis will be affected by the degree to which it can secure access to bases and ports in the region. Access to such facilities in Japan, Singapore, and Philippines would be especially important.
- Despite disagreement within the Legislative Yuan, the Taiwan government is committed to its own defense and is taking measures to improve its deterrent posture. It has begun development of an indigenous surface-to-surface missile and is seeking to purchase greater numbers of F-16 fighter aircraft from the United States.

A Case Study of the Automotive Industry that Illustrates Challenges to U.S. Manufacturing and the U.S. Defense Industrial Base

The Commission conducted a hearing in Dearborn, Michigan to examine China's effects on the U.S. automotive industry and their implications for the U.S. economy and security. The next five to ten years will witness a new phase of Chinese economic development: an automotive industry capable of producing a large volume of vehicles of sufficient quality to compete in international markets. Indeed, the Commission believes China's goal, once its production capacity matures, will be to seize significant shares of markets abroad rather than simply to provide vehicles for domestic consumption; that is, China will continue to follow its model of export-driven growth, with the U.S. market serving as the primary target.

China's rising automotive sector—Chinese firms already are an important factor in auto parts and other subsidiary industries—will shake the international car market. In particular, it will place additional stress on the U.S. industry, both the "Big Three" domestic manufacturers that already are struggling to restructure their businesses to remain competitive in the current environment, and those foreign-based firms with plants in the United States. The many subsidies provided by the Chinese government to the auto industry will quickly distort the nature of the market. This will be true especially in the United States, where markets are most open.

The Chinese challenge to the U.S. auto industry is a significant assault on American manufacturing, and that assault is increasing in magnitude and in pace. The automotive sector has been and remains a core element in the U.S. economy, generating great wealth for its firms, its employees, and its suppliers, spurring generations

of economic growth across the country, and transforming the quality of American life. While China has yet to demonstrate the ability to produce automobiles of quality in great volume, there is no reason to presume that it will not do so. The Commission further believes that China's achievements in automotive manufacturing serve as an example of how its progress up the "value-added" chain of manufacturing has begun to affect the U.S. defense industrial base. The downsizing of the U.S. auto industry is having enormous repercussions as important skills and capabilities are lost. Military supply chains are inherently vulnerable to unpredictable shocks—as the shortages of parts resulting from unanticipated use and loss rates in Iraq and Afghanistan clearly demonstrate. To the degree that U.S. military systems increasingly rely on commercially available components, including some automotive components, production and supply uncertainties may have national security consequences.

Findings

- China's automobile production capacity already exceeds domestic demand by 10 percent to 20 percent.[18] This overcapacity is projected to grow to 8 million vehicles by 2010 and it is very likely that China will begin exporting vehicles to the United States within the next five to ten years. Chinese industrial subsidies, undervaluation of currency, discriminatory tariff rates, tax breaks, and a host of other unfair trade practices will make the price of Chinese vehicle imports artificially low in foreign markets. The U.S. auto industry will find it difficult to compete with unfairly-priced imports and likely will lose an additional share of the domestic market.
- Serious intellectual property violations by Chinese companies are harming U.S. consumers and American manufacturers. Auto parts are being counterfeited, intentionally misrepresented, and sold as genuine—all in direct violation of both China's trademark laws, which clearly are not being enforced, and China's World Trade Organization (WTO) obligations. American citizens are being put at risk as inferior Chinese counterfeit auto parts find their way under the hoods of vehicles driven on our streets, while U.S. companies lose significant market share and brand reputation to such counterfeit goods.
- Chinese regulations currently require automakers to exceed a 40 percent domestic content requirement or face higher tariffs on the imported auto parts. These discriminatory tariffs pressure China-based auto assembly companies to use parts manufactured in China rather than U.S.-manufactured parts. This violates the promises China made, and the legal obligations it assumed, as part of its accession to the WTO. These regulations are intended to force U.S. and other manufacturers to shift parts production to China, resulting in U.S. manufacturers losing business and U.S. workers losing jobs.
- China's WTO-illegal trade practices are serving to hollow out the U.S. manufacturing base. The loss of America's sophisticated manufacturing capabilities has serious national security implications. As the U.S. manufacturing base diminishes, the U.S. military risks losing its ability to easily, quickly, and reliably procure

much-needed weapons systems, components, and spare parts. With a smaller industrial base to draw from, military leaders are increasingly concerned about maintaining warfare capabilities, especially in the event of actions not supported by the People's Republic of China.
- As the U.S. defense establishment becomes increasingly reliant on the private sector for commercial off-the-shelf parts and components, the military risks losing control of its supply chain.
- The problems with which American car makers and parts manufacturers are struggling exemplify the challenges that the U.S. industrial base faces as China expands its industrial prowess and continues to utilize unfair trade advantages.

China's Internal Problems, Beijing's Response, and Implications for the United States

Economic progress has lifted hundreds of millions of Chinese out of abject poverty; this is a significant achievement for China and for the world. However, hundreds of millions more continue to live at subsistence levels and Chinese growth has itself created or exacerbated divisions within Chinese society. This internal instability often elicits a repressive response from Beijing. The Commission remains concerned about the international consequences that may result from Chinese internal instability and is at the same time concerned about the external effects of the Chinese Communist Party's measures to retain political control. China suffers from worsening environmental conditions, endemic corruption, fear of energy shortages, an inadequate public health system, population shifts, and other problems that provoke chronic social discontent. The Beijing government's confusion about these tremendous issues, coupled with its reluctance and delay to address them, is itself a further problem. China remains prone to treat all protest or political disagreement as a challenge to the state and the party and to respond with repressive and often violent measures. Also troubling to the Commission is China's frequent tendency to try to refocus internal dissent toward the outside world, with a particular emphasis on Japan, Taiwan, and the United States. Whether this is the government's intent matters little; the result is that Chinese popular opinion is inflamed and international tensions are increased.

Findings

- While China's rapid economic development continues, serious internal problems exist, such as environmental degradation, increased energy demand that threatens to outstrip energy supplies, corruption, censorship, and increasing social discontent.
- China has acknowledged some of its internal problems and even enacted rules or regulations intended to address them. The U.S. government is conducting some bilateral programs with China aimed at remedying internal problems. However, China is not allocating enough of its own time, energy, or resources to effectively solve many of them.
- A number of the internal challenges facing Beijing have international implications, including implications for the region and the U.S. Some of these problems are not limited by boundaries, such as pollution and epidemic diseases originating in China.

The number of Americans going to China, the increasing number of Chinese going abroad, and Beijing's failure to address these problems could result in the spread of epidemic diseases to the United States.
- The constraints of China's one-party system limit its ability to deal with its internal problems.

China's Media and Information Controls

In an ongoing effort to maintain its hold on power, promote nationalism, limit access to a free press, and stifle dissent, China has been increasing its control over media and information flows, including the Internet. Through this control and manipulation, the Chinese government shapes public opinion, including public opinion regarding Taiwan and the United States. This creates misunderstanding and can induce public protests against foreign countries. The Commission remains concerned about the long-term effects of these practices on the way that Chinese citizens who are subjected to manipulated and highly controlled information view the United States and other democratic nations.

Findings

- The Chinese government has put in place extensive controls to direct the flow of information to its citizens, stifling dissent and allowing the government to shape public opinion and views of foreign countries such as the United States.
- The use of legislation and the imprisonment of journalists, especially Chinese employees of foreign media, have led the Chinese media to "self-censor" to avoid prosecution. The U.S. government, media, and businesses are unable to obtain basic economic, market, demographic, agricultural, and political information.
- The Chinese government filters the Internet, using regulation, software, and hardware to prevent citizens from obtaining access to information it deems unacceptable, as well as information from foreign media sources. Internet-related U.S. companies that wish to do business in China are forced to choose between complying with Chinese regulations that limit free speech, or not entering the Chinese market at all.

THE COMMISSION'S KEY RECOMMENDATIONS

The Commission believes that 10 of its 44 recommendations to Congress are of particular significance. These are presented below in the order in which they appear in the Report. The complete list of 44 recommendations appears at the Report's conclusion, on page 205.

- ***Pressing a WTO case against China's IPR violations*—**The Commission recommends that Congress urge the U.S. Trade Representative to press ahead aggressively with a WTO case against China for its manifest failures to enforce intellectual property rights, selecting the best of many potential cases in order to establish a strong precedent, and that Congress urge the U.S. Trade Representative to enlist other nations to join in the case. *(Chapter 1)*

- ***Securing China's cooperation to end genocide in Darfur—*** The Commission recommends that Congress urge the Administration to seek direct dialogue and cooperation with China with regard to securing a resolution to the conflict in the Darfur region of Sudan that will halt the genocide occurring there and provide security and basic human rights for the affected population. Congress should instruct the Administration to report semiannually on China's actions in Sudan and any progress that has been made through dialogue with China. *(Chapter 2)*
- ***Facilitating Taiwan's participation in international organizations—***The Commission recommends that in response to China's efforts to isolate Taiwan, Congress encourage the Administration to implement a long-term policy to facilitate Taiwan's participation in international organizations and activities for which statehood is not a prerequisite, such as the World Health Organization, the Community of Democracy, the Proliferation Security Initiative, and other multilateral public health, counterproliferation, counterterror, and economic organizations as appropriate. Congress should instruct the Administration to report annually on its actions to ensure that Taiwan is not isolated in the world community. *(Chapter 2)*
- ***Inspecting North Korean ships at sea and containers in Chinese ports—***The Commission recommends that Congress urge the Administration to seek agreement with China to carry out inspections at sea of ships bound to or from North Korean ports and establish a U.S.-China joint operation to inspect for contraband all shipping containers being moved to or from North Korea when they pass through Chinese ports, in fulfillment of the obligations under U.N. Security Council Resolution 1718 to prevent the sale or transfer of missiles, and nuclear and other weapons-related materials and technologies, to and from North Korea. *(Chapter 2)*
- ***Permitting sanctions against Chinese parent companies of proliferating subsidiaries—***The Commission recommends that current sanctions against Chinese companies that proliferate equipment and technology related to weapons of mass destruction and their delivery systems be broadened and harmonized for increased effectiveness. The Commission recommends that Congress expand current sanctions regimes to extend penalties to the Chinese parent company of a subsidiary that engages in proliferation activities, regardless of the parent company's knowledge of or involvement in the problematic transaction. Access to U.S. markets (including capital markets), technology transfers, and U.S. government grants and loans should be restricted from proliferating companies and their Chinese parent companies and related subsidiaries irrespective of the related firms' knowledge of the transfers in question. *(Chapter 2)*
- ***Insisting China fulfill its obligations under U.N. Resolutions sanctioning North Korea for proliferation—***The Commission recommends that Congress instruct the Administration to insist that China fulfill its obligations under U.N. Security Council Resolutions 1695 and 1718 and take more significant

measures to denuclearize the Korean peninsula and counter North Korean proliferation activities. The Congress should further instruct the Administration to report semiannually about specific actions the Chinese government has taken in this regard. *(Chapter 2)*

- ***Conducting a strategic dialogue about the use of space—*** The Commission recommends that Congress direct the Administration to engage in a strategic dialogue with China on the importance of space surveillance, the military use of space, and space weapons. Such a dialogue should include strategic warning and verification measures. *(Chapter 3)*
- ***More effectively assessing China's military modernization—***The Commission recommends that Congress instruct the Director of National Intelligence, working with the Department of Defense, to formulate and establish a more effective program for assessing the nature, extent, and strategic and tactical implications of China's military modernization and development. *(Chapter 3)*
- ***Tracing supply chains of critical weapons systems—***The Commission recommends that Congress require the U.S. Department of Defense to trace the supply chains of all components of critical weapons systems. *(Chapter 4)*
- ***Prohibiting U.S. companies from disclosing information about Chinese users or authors of online content—***The Commission recommends that Congress prohibit disclosure by U.S. companies to the Chinese government, in the absence of formal legal action by the Chinese government, of information about Chinese users or authors of online content. Congress should require that where a U.S. company is compelled to act, it shall inform the U.S. government. A compilation of this information should be made publicly available semi-annually. *(Chapter 6)*

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INTRODUCTION

China's embrace of economic modernization and the collapse of the Soviet Union created a new basis for U.S.-China relations and removed the old one; there are new shared interests and the old common enemy is no more. China also is asserting itself on the world stage—both economically and politically—and the United States increasingly finds China is a major force to be taken into account with respect to U.S. international activities and policies.

When Congress approved Permanent Normal Trade Relations (PNTR) with China in 2000, it not only sought to place bilateral trade relations on a solid footing and clear the way for China's entry into the World Trade Organization (WTO), but it also hoped China's WTO membership and exposure to the global trading system would move China toward democracy, and toward a free market economy.

The plan was that, by establishing a free market economy, participating responsibly in the international framework of economic and security agreements that unite the world community of the early 21st Century, and exhibiting comportment appropriate to the world's leading nations, China would assume a world leadership role appropriate to its size, power, and history. More narrowly, the Congress hoped China's WTO accession would open China's market to sales of U.S.-manufactured goods and services.

The debate on the PNTR legislation (signed into law as Public Law 106-286) made this clear. Representatives and Senators laid out their expectations of the effects of extending PNTR and supporting China's WTO membership. Prior to Congressional action on the legislation, the executive branch also stated its expectations. Indeed, in the years preceding that action, presidents of both parties played a major role in shaping Congress's and the public's expectations of what would transpire if China were accepted into the WTO.

That debate reflected a consistent American government vision for a future China, hoping it would choose to become a cooperating member of an open, rules-based international system—an active and responsible member of the community of leading nations.

To better define that concept, the Commissioners reviewed Congressional and executive branch expectations expressed prior to the vote to grant PNTR status in order to use them as a benchmark against which to gauge China's domestic and international economic, political, and security actions.

Among the goals espoused by Members of Congress and the executive branch were that China would—

- adhere to the rules of a "rules-based trading system;"
- open its markets to American exporters, investors, businesses, and farmers;

- become a member of the community of nations that promotes democratic government and human dignity;
- permit the spread of free thinking and ideas including via the Internet;
- reduce tensions across the Taiwan Strait;
- promote peace and stability in the world; and
- avoid a new arms race elsewhere in Asia.

One Member of Congress anticipated that the economic forces that would be released by free trade and commerce would overwhelm the forces in China seeking to maintain socialism, repression, and totalitarianism. He went on to express his hope that "political freedom will follow economic freedom," a sentiment that summed up the aspirations of many of his colleagues.

There was agreement among many Members of Congress that China's compliance with the rules of the WTO—to which it agreed in order to accede—should be the new standard against which China's government's actions should be measured.

A number of Senators and Representatives expressed the view that it will be essential for Congress to watch China because China's activities in the world likely will be of great importance to the United States and will have a profound effect on U.S. values and interests. One reason this was of special concern was that by approving the PNTR legislation and China's accession to the WTO, Congress gave up the right to review China's trade status annually and, based on that review, affirmatively determine that status for the subsequent year.

Some Senators and Representatives feared this might result in Congress overlooking significant events or trends that should be considered and addressed by the U.S. government. To prevent this from occurring, they concluded they should establish mechanisms to maintain current knowledge about China's actions and call those of significance to Congress's attention. Toward this end, Congress established two commissions: the Congressional-Executive Commission on China and this Commission—initially designated the U.S.–China Security Review Commission (later re-titled the U.S.–China Economic and Security Review Commission).

The topics that Congress charged this Commission to monitor and report on to Congress reflect the longstanding American belief that a state's fundamental character is embodied in all its actions and activities, and that economic and security matters are but two faces of a single coin. They also offer a statement of the areas of Chinese activity that were of greatest concern:

- China's proliferation of weapons of mass destruction and other weapons (including dual–use technologies), and actions the United States might take to encourage China to stop proliferating
- The transfer of U.S. high technology, manufacturing, and research and development activities to China, and the impact of such transfers on U.S. national security including U.S. economic security and the standard of living of its citizens
- The adequacy of United States export control laws
- China's effect on world energy supplies and how the United States can influence China's energy policy

- China's access to and use of U.S. capital markets, and whether existing disclosure and transparency rules are adequate to identify Chinese companies engaged in activities injurious to U.S. interests
- The triangular economic relationship among the United States, Taiwan, and China
- China's military modernization and force deployments aimed at Taiwan
- China's national budget and fiscal strength in relation to its internal instability, and the likelihood that problems arising from such internal instability will be externalized
- China's compliance with agreements on prison labor imports and intellectual property rights and U.S. actions to enforce those agreements
- China's compliance with its accession agreement to the World Trade Organization
- The implications for its economic and security relations with the United States of China's restrictions on access to information and free speech by its citizens.

When he signed the legislation on October 10, 2000 authorizing PNTR status for China, President Bill Clinton noted that it was a major step toward China's entry into the WTO. He said he also believed this would hasten the process of opening markets for the United States, accelerate the information revolution in China, and strengthen the rule of law in China while building a "safer, more integrated world."[1]

On December 27, 2001, as President George W. Bush signed a proclamation granting PNTR status to China, he said that "[t]his is the final step in normalizing U.S.-China trade relations and welcoming China into a global, rules-based trading system."

The comments of both presidents, other executive branch officials, and Members of Congress during the debate on whether to grant PNTR status to China offered some important ingredients for a coherent and comprehensive U.S. policy toward China, but even their aggregation did not compose such a policy. To date, a comprehensive policy unfortunately has not been developed and enunciated.

Robert Zoellick, former Deputy Secretary of State in the George W. Bush Administration, came closest to attempting that. He advocated a policy encouraging China to be a full member of the international system and to accept the role of what he termed "responsible stakeholder."[2] Zoellick identified U.S. business concerns about whether Chinese policies are adequate to stop "rampant piracy, counterfeiting, and currency manipulation" and whether China was pursuing "mercantilist ... policies [that] will try to direct controlled markets instead of opening competitive markets."

Referring to the worries the Bush Administration's Department of Defense had expressed in its *Annual Report to Congress on the Military Power of the People's Republic of China* about the lack of transparency in China's military growth and how it will use its increasing military power, Zoellick said these uncertainties have caused the United States and other nations to "hedge their relations with China." He encouraged China to "openly explain its defense spending, intentions, doctrine, and military exercises."

Former Deputy Secretary Zoellick's concept of "responsible stakeholder" provides a strong beginning point for a coherent and comprehensive policy toward China that has been missing in the United States for the past quarter century. The Commission believes the United States should have such a policy and that the Congress should play an important role in its development.

The Commission recognizes that China sees the concept of nationhood and sovereignty, the responsibilities of nations to each other, and the responsibilities of nations to their own citizens through a different prism than does the United States. That is neither surprising nor necessarily inappropriate. Nonetheless, there are certain immutable standards to which the world's leading nations subscribe or adhere in similar form. For example, when nations such as China choose to enter the global arena by voluntarily making international agreements, the universal concept of honoring one's commitments should and does apply.

From Congressional, executive branch, academic, and think-tank commentary, the Commission has distilled what it believes to be the elements of an American understanding of what it means to be a responsible member of international society. It believes these elements, including the following features, should be applied to China:

- Responsible nations abide by the rules—both the letter and the spirit of agreements into which they enter, whether bilateral or multilateral.
- In an economic sense, responsible nations abide by international trade agreements to which they are a party and promote free and fair trade, and they participate in international resource markets in ways that do not distort or destabilize those markets or deny other states access to natural resources, especially energy.
- From a geopolitical standpoint, responsible nations contribute to international security, good governance, transparency, and accountability; do not upset the international political system; and do not seek to disrupt the spread of representative governments.
- From a military and security standpoint, responsible nations do not disrupt or destabilize the military balances that underpin global and regional security.
- In addressing other global problems, responsible nations work to improve their environments and the health status of their people and advance their own domestic development in ways that support international norms on issues such as human political rights, press freedom, religious freedom, government transparency, controlling corruption, and labor rights.

The Commission believes these standards should be used to measure China's actions and activities. This report compares what China has done during the past year in the areas of the Commission's Congressional mandate to these standards. We hope it will assist Congress to determine how it generally should respond to China in order to protect U.S. interests. More specifically, the Commission offers an agenda of proposed Congressional actions it believes will most directly secure those interests.

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CHAPTER 1

THE U.S.-CHINA TRADE AND ECONOMIC RELATIONSHIP

OVERVIEW

China is America's third largest trading partner, behind Canada and Mexico.[1] But China's trade relationship with the United States is extremely unbalanced. China exports to the United States six times the value that it imports from the United States. In 2005, total U.S. exports to China were $41.8 billion, while imports from China amounted to $243.4 billion.[2] In 2006, these numbers are estimated to increase to $56.3 billion and $284.9 billion, respectively.[3] Although this lopsided economic relationship has led to heightened tensions between the two countries, the bilateral trade imbalance continues to grow. In 2006, China's trade surplus with the United States is expected to increase 13 percent to $228.6 billion.

China's global current account surplus, the broadest measure of trade and investment flows, continues to accelerate.[4] Foreign direct investment in China increasingly affects the volume and type of China's international trade. Foreign-funded firms operating in China dominate the landscape of international trade. In 2005, 58 percent of China's exports came from foreign-invested enterprises.[5] The dominance of foreign capital in the export sector is a reflection of Chinese industrial policy, which attempts to attract foreign investment to export-related manufacturing enterprise in China. Among the direct incentives for such foreign investment are tax breaks, low-interest loans, discounts on land purchases, and government-provided infrastructure enhancements.

Trade tensions between the United States and China are heightened by China's failure to abide by the international trade agreements to which it is a party. For example, China agreed in 2001 as part of its application to join the World Trade Organization to eliminate certain government subsidies meant to encourage exports. China, however, still has an industrial policy that employs a wide variety of subsidies to promote favored industries. As a result, U.S. exporters and some U.S. investors, particularly those in financial services, face a variety of non-tariff barriers and major impediments to conducting business in China.

The U.S.-China trade and investment relationship exposes U.S. industry and the U.S. innovation base to huge levels of intellectual property theft—in the case of entertainment software, approaching the 100 percent level. This is a growing problem for U.S. competitiveness as intellectual property industries contribute to more than half of all U.S. exports and represent 40 percent of U.S. economic

growth. Fifty-five percent of U.S. companies operating in China were hurt by intellectual property rights violations according to a business association survey in 2006.[6] The U.S. Chamber of Commerce estimates that the global intellectual property industry loses $650 billion in sales due to counterfeit goods.[7] And some analysts estimate that China is responsible for as much as 70 percent of this counterfeit goods market.[8]

U.S. businesses and workers and the overall U.S.-China trade and investment relationship are vulnerable to harm from China's non-market-oriented financial system and monetary policy, as well. For example, China maintains an extensive system of subsidies for manufacturing based in China, from easy money and loan forgiveness from the banks to an artificially low exchange rate for the renminbi. Chinese banks are predominately state-owned or state-controlled and often are expected to grant loans with below-market interest rates, carry large amounts of defaulted loans on their books, or forgive such debts of government-owned companies. In a centrally planned economy such as China's, these loans are a device to preserve internal stability and strengthen the control of the Chinese Communist Party. Furthermore, China's government undervalues the renminbi relative to the dollar at a level estimated by most economists to be between 15 percent to 40 percent.[9] The undervalued renminbi makes U.S. products more expensive in China than they would be if the renminbi were allowed to seek its own level in the international currency markets. As a result, U.S. manufacturers are able to sell fewer of their goods to China. Conversely, the undervalued renminbi makes Chinese products less expensive in the United States than they would be if the international currency market were allowed to determine the relative value of the two currencies. Therefore, U.S. consumers buy more from China. The failure to address this problem is increasingly a factor in U.S. companies relocating production to China. The overall result is a growing U.S. current account deficit and increasing ownership of U.S. debt instruments by the Chinese. The Chinese banks now have $1 trillion in foreign currency reserves, the majority of which is held in U.S. dollar-denominated bonds.[10]

As China approaches the fifth anniversary of its admission to the World Trade Organization on December 11, 2006, these problems stand out as major impediments to a more equitable and rules-based trading relationship between China and the United States. There is a great deal at stake in the seeming minutiae of trade agreements, because the decisions of two of the world's economic giants have consequences for their 1.6 billion residents as well as for those in Europe, Africa, and Latin America. Jobs, industries, and entire regions can be jeopardized by the irresponsible actions of other nations in a global economic system that is ever more intertwined. This chapter will highlight some of the problems that continue to rend the fabric of fair trade: currency manipulation, counterfeiting, export subsidies, industrial polices aimed at discouraging imports and encouraging exports, hidden trade barriers, and discrimination against foreign investors. None of these practices is permitted by any of the trade agreements that China and the United States have signed. Acknowledging the harm that Chinese

practices do to workers, consumers, and investors in each country is the first step in the reform that must follow.

SECTION 1: THE STATUS OF CHINA'S COMPLIANCE WITH ITS WORLD TRADE ORGANIZATION OBLIGATIONS AND THE IMPACT OF CHINA'S INDUSTRIAL SUBSIDIES ON U.S. AND OTHER MARKETS

The Commission shall investigate and report on "WORLD TRADE ORGANIZATION COMPLIANCE—The compliance of the People's Republic of China with its accession agreement to the World Trade Organization."

Key Findings

- China's adherence to its many World Trade Organization (WTO) obligations remains spotty and halting in important areas five years after China attained membership. As a result, U.S. exporters and investors face a variety of non-tariff barriers and major impediments to conducting business in China. In some areas, such as banking reform, China has made progress. But in too many cases, the government has delayed and even backtracked on its obligations.
- China "has not yet fully embraced the key WTO principles of market access, non-discrimination, and national treatment, nor has China fully institutionalized market mechanisms and made its trade regime predictable and transparent . . . [and China] continues to use an array of industrial policy tools . . . to promote or protect favored sectors and industries," according to the U.S. Trade Representative.[11]
- China's failure to enforce intellectual property rights provides a particularly egregious example of its noncompliance with WTO rules. China's refusal to protect copyrights, inventions, brands, and trade secrets has placed it first among nations on the U.S. Trade Representative's "priority watch list" of countries that tolerate intellectual piracy.[12]
- China has a centralized industrial policy that employs a wide variety of tools to promote favored industries. In particular, China has used a range of subsidies to encourage the manufacture of goods meant for export over the manufacture of goods meant for domestic consumption, and to secure foreign investment in the manufacturing sector.
- China artificially lowers the value of its currency to maintain an export-led trade policy. The State Administration for Foreign Exchange accomplishes this by buying dollars and other foreign currency in China at a fixed rate of around 8 renminbi to the dollar. Only small fluctuations in the value of the renminbi are allowed.
- At times, China's central government and governing bodies in the provinces and localities appear to be operating at cross purposes. Decisions by the central government meant to comply with WTO rules sometimes are ignored in the provinces. Regulations established by Beijing are not necessarily enforced elsewhere.

Overview

China spent 15 years negotiating the terms of its accession to membership in the General Agreement on Tariffs and Trade (GATT) and its successor organization, the WTO.[13] Despite the fact that China was officially designated a "non-market economy," it was admitted to WTO membership in December 2001.[14] Among the motivations for the United States and other nations to approve its accession was the idea this would encourage continued economic policy reform in China. In conjunction with China's WTO accession, Congress granted Most Favored Nation trading status to China on a permanent basis, ending the preceding practice of annual Congressional review of China's trade and human rights practices. Proponents of normalizing trade relations with China and allowing it into the now-149-member WTO argued at the time that accepting a country whose market mechanisms were so primitive and whose economy was still centrally controlled by a Communist dictatorship would accelerate economic liberalization. They noted that China's leadership had openly acknowledged since 1978 that economic reform was required to bring prosperity to a nation impoverished by clumsy central planning. Opponents of China's WTO admission countered that allowing entry to a country whose institutions and practices were so far removed from market-oriented, free-trade principles would cause large disruptions and imbalances in international trade and result in U.S. job loss.

Today, both sides can point to evidence to support their views. On the positive side, China has sustained a Gross Domestic Product (GDP) growth rate of over nine percent since its admission to the WTO. The proportion of China's population living below the extreme poverty line—$2 per day—fell from nearly 73 percent in 1990 to 32 percent in 2003. Meanwhile, the sector of the economy represented by private enterprise expanded to the point that it now produces nearly 60 percent of China's GDP.[15] In marked contrast to other Asian nations such as Japan and India, China has generally welcomed foreign direct investment and has encouraged joint ventures with Chinese companies. In parts of the services sector, China appears committed to allowing foreign investment as a way of acquiring and applying the management expertise of foreign companies. For example, China opened the domestic currency trade in several cities to foreign banks ahead of schedule.[16] The United States and China agreed in 2004 to substantially increase direct air services between the two nations over the next six years, including both passenger and cargo services. In addition, China has reduced tariff rates on many products on schedule and reduced the number of import quotas in addition to expanding trading rights.[17] China also has granted distribution rights to foreign companies, thereby allowing their products to be sold directly to consumers. China is now America's second largest market for aircraft exports and the tenth largest market for services exports, according to figures compiled by the U.S. Trade Representative.[18] Beijing also has also made laudable efforts to educate its business leaders and its citizens in the intricacies of WTO regulations and requirements, distributing written guidelines and offering seminars on the new requirements.

But China also has missed many opportunities to comply with both the letter and the spirit of the WTO rules and with its own agreement to phase-in market-oriented reforms. In terms of economic reform, China has essentially gathered the "low-hanging fruit" and must now undertake the more difficult challenges.[19] As the U.S. Trade Representative has said, China "has not yet fully embraced the key WTO principles of market access, non-discrimination, and national treatment, nor has China fully institutionalized market mechanisms and made its trade regime predictable and transparent . . . [and China] continues to use an array of industrial policy tools . . . to promote or protect favored sectors and industries."[20]

While an increasing proportion of the economy is private—perhaps 60 percent of GDP is produced by private sector sources—Beijing still wields a heavy hand in planning the overall economy, particularly when it comes to promoting an export-based growth strategy. The Chinese State Council presents a Five-Year Plan that sets forth the economic and development priorities for the coming years. The 2006-2010 period will be governed by the eleventh Five-Year Plan that denotes specific industries to be promoted. These include integrated circuits and software, next-generation network technology, biomedical technology, civilian aircraft, satellite applications, and equipment manufacturing industries, including clean power generation equipment, rail transportation equipment, and machine tools.[21] To encourage domestically-owned firms to move up the value-added chain, China currently is encouraging investment in high technology-based manufacturing and uses "guidance" as well as trade policy instruments for this purpose.[22] These capital goods industries are currently dominated by the United States and other technologically advanced nations and are considered the crown jewels of exports.

Beijing employs such administrative "guidance" to banks to direct loans and favorable terms to certain businesses and industries. China's tax system encourages foreign direct investment by applying 15 percent and 24 percent income tax rates to foreign-based affiliates operating in China while requiring domestic companies to pay a 33 percent tax rate. Government at all levels can use tax breaks to lure investments. The result is an allocation of resources in favor of manufacturing and export-oriented business.[23]

Manufacturing, especially export-oriented manufacturing, has developed more rapidly than other sectors as a result of such government incentives. According to the WTO's analysis, this segment of industry, which includes manufacturing, mining, and production and supply of electricity, gas, and water, accounted for over 40 percent of GDP in 2005. Manufacturing, much of which is dominated by foreign-invested enterprises, now accounts for over 90 percent of China's merchandise exports. Foreign-invested enterprises appear also to account for a greater share of the output of higher value-added production.

Enforcing China's WTO Compliance

The WTO conducts studies of compliance with its rules. Organizations such as the U.S. Chamber of Commerce, the International Intellectual Property Alliance, the National Association of Manu-

facturers, and the U.S.-China Business Council also analyze compliance with WTO rules, and report findings to a federal interagency group in Washington, the Trade Policy Staff Committee, which produces an annual evaluation of China's WTO compliance that is published by the U.S. Trade Representative. These studies help focus attention on unfair trade practices by pointing out apparent violations of trade laws.

The WTO process favors negotiation over confrontation, a fact embodied in the language of the process, which references "dispute settlement panels" rather than "courts." The first step of the process requires the two sides in a dispute to meet to settle their differences. Only then can a formal complaint be brought to the WTO. Even then, either party can initially block the formation of a three-judge panel to hear a case. The adjudicative phase of a WTO complaint occurs only after mandatory "consultations" among the parties have failed to reach a compromise. Deliberations of the panels, the second step in the process, are secret and the decision is given to the parties for a 30-day comment period before being released to the public. The intent of every stage of the process is to encourage the parties to settle amicably. In fact, in response to a WTO complaint by the United States over China's treatment of U.S. semiconductors, China and the United States quickly reached a settlement. The two countries should view the entire process as one of encouraging needed reform and bringing fairness to trade.

Centrally Planned Subsidies

In its WTO accession agreement, China agreed to eliminate certain government subsidies meant to encourage exports—specifically, tax incentives and preferential bank financing restricted to producers who agree to export their products. China also pledged to end government programs that encourage local sourcing for parts instead of using imported parts.[24] But since joining the WTO, China has increased the use of such export subsidies.[25] In both its December 2005 Report to Congress on China's WTO Compliance and its February 2006 Top-to-Bottom Review of U.S.-China Trade Relations, the U.S. Trade Representative has detailed China's efforts to protect domestic producers:

> *"Since acceding to the WTO, China has increasingly resorted to industrial policies that limit market access by non-Chinese origin goods or bring substantial government resources to support increased exports . . . In 2005, examples of these industries are already evident. They include the issuance of regulations on auto parts tariffs that serve to prolong prohibited local content requirements for motor vehicles, the telecommunications regulator's interference in commercial negotiations over royalty payments to intellectual property rights holders in the area of 3G standards, the pursuit of unique national standards in many areas of high technology that could lead to the extraction of technology or intellectual property from foreign rights-holders, draft government procurement regulations mandating purchases of Chinese-produced software, a new steel industry, continuing export restrictions on coke, and excessive government subsidization benefiting a range of domestic indus-*

tries in China. Some of these policies appear to conflict with China's WTO commitments in the areas of market access, national treatment and technology transfer, among others."[26]

According to Loren Yager, Director for International Trade at the Government Accountability Office, "Chinese subsidies remain very difficult to identify and quantify, largely because of the structure of the Chinese economy and the lack of transparency in the country's subsidy regime."[27] However, there are a plethora of practices that act as indirect subsidies: preferential tax policies, government funds for state-owned enterprises, double bookkeeping by such enterprises, subsidized inputs for such enterprises, "give-away" prices on energy and land, sectoral credit allocation, loan extensions, debt forgiveness, wage ceilings, and the undervalued renminbi.

The result of subsidies intended to attract factories from abroad and boost China's production of goods for export can be seen easily in three key 2005 economic statistics. Foreign-funded firms[28] in China produced 58 percent of China's exports in 2005.[29] Seventy-one percent of the $60.6 billion in foreign direct investments in 2004 went to the manufacturing sector.[30] Manufactured goods accounted for 94 percent of China's exports.[31] China's industrial policy directly harms U.S. manufacturers and results in the loss of U.S. manufacturing jobs.

For example, China subsidizes its steel industry by 1) transferring facilities and land at below market prices; 2) providing debt-to-equity swaps through state-owned banks; 3) providing debt forgiveness through state-owned banks; 4) providing tax benefits for export performance; 5) controlling the prices of raw materials; and 6) maintaining an undervalued renminbi. Subsidies such as tax benefits based on export performance are clearly prohibited by WTO rules. By intervention in the steel industry, the Chinese government has created substantial excess capacity and "has skewed the entire world market for steel and for steel raw material."[32]

Many subsidies in China are distributed through China's banking system to state-owned institutions. Not all loans to state-owned enterprises fall into default and not every loan is forgiven rather than repaid. But a significant portion of these loans eventually is written off, constituting an unwarranted subsidy. Standard & Poor's estimates China's delinquent loans total approximately $600 billion.[33] In the past, this credit was provided from government funds to the state-run economic sector to fund pensions and other employment-related expenses. Now, the funds are mainly used to pay for "extravagant real estate projects" and a general "over-investment in fixed assets."[34]

China's low wage rates due to unpaid, underpaid, and repressed labor constitute another indirect subsidy to Chinese producers, including domestic, joint venture, and foreign-funded companies. Chinese official sources report over 100 billion renminbi ($12.6 million) in unpaid wages, 70 percent of which are in the construction sector.[35] China has not ratified four of eight core International Labor Organization Conventions. Those not ratified concern the right to organize and collectively bargain and the abolition of forced labor.[36] By refusing to accept the responsibilities that other WTO members accept for their workers, the Chinese government countenances low

compensation of labor in violation of international standards, essentially subsidizing those firms that take advantage of this Chinese laxity.

SECTION 2: CHINA'S APPROACH TO INTELLECTUAL PROPERTY RIGHTS AND ITS PRODUCTION OF COUNTERFEIT GOODS

The Commission shall investigate and report on—

"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."

"WORLD TRADE ORGANIZATION COMPLIANCE—The compliance of the People's Republic of China with its accession agreement to the World Trade Organization."

Key Findings

- Despite its many promises to comply with its international obligations to protect intellectual property, China has failed to deter widespread violations of trademarks, copyrights, and patents. The failure stems from lenient rules and regulations, mild penalties for transgressors, and an overall lack of enforcement. Although the central government has made some effort to pass stricter laws, enforcement at the local and provincial levels lags far behind. Ultimately, the central government is required by its World Trade Organization membership to accept responsibility.
- China's failure to protect intellectual property is a serious problem for U.S. competitiveness. U.S. intellectual property industries contribute to more than half of all U.S. exports and represent 40 percent of U.S. economic growth. While the full extent of loss to U.S. industry due to Chinese intellectual property rights violations is unknown, U.S. industry reports losses totaling billions of dollars. The U.S. Chamber of Commerce estimates that the global intellectual property industry loses $650 billion annually in sales due to counterfeit goods.[37] And some analysts estimate that China is responsible for as much as 70 percent of this counterfeit goods market.[38] Annual losses to the U.S. copyright industries are estimated to be between $2.5 billion and $3.8 billion.[39] And U.S. pharmaceutical industries lose 10 percent to 15 percent of annual revenues in China due to intellectual property infringement.[40]
- The Customs Bureau of the U.S. Department of Homeland Security made 3,709 seizures of counterfeit goods originating from China in fiscal year 2005, totaling $64 million.[41] Total exports of counterfeit goods from China to the United States generally are estimated to be much higher and can be expected to increase even further. Not only is China's enforcement of intellectual property laws weak, but China also has liberalized its strict ex-

port licensing regime to allow any business to export. As more businesses begin to export, counterfeit goods will be easier to ship.

- Counterfeit exports from China pose a health and safety threat to U.S. citizens. The World Health Organization reports that counterfeit pharmaceuticals of Chinese origin cost pharmaceutical companies $32 billion a year.[42] Chinese counterfeiters have produced batteries that explode because of faulty manufacturing, and engine timing belts that break after only one-fifth the time of the authentic product.[43]
- Counterfeit products account for 15 percent to 20 percent of products made in China and equal eight percent[44] of China's $2.2 trillion[45] gross domestic product (GDP). In some cities, the manufacturers and distributors of counterfeit goods are the major employers and the dominant contributors to the tax base.
- Many local governments in China are so financially dependent on the counterfeit trade that they are reluctant to interfere with the violations, and officials at those levels often profit personally from counterfeiting.
- Several U.S. industries, particularly those dependent on copyright protections, report high piracy rates of their products in China. For example, the piracy rate for business software has reached 86 percent.[46] In this situation, the WTO dispute settlement mechanism provides the strongest enforcement tool available to the United States government to address China's failure to enforce intellectual property rights.
- Market barriers to American exports to China contribute to the climate of piracy in China. When U.S. companies experience Chinese government censorship, delays, distribution restrictions, or other barriers in getting their products to market, counterfeiters move in first.

Overview

There is little disagreement among international bodies that China fails to enforce intellectual property rights (IPR). The requirement to enforce such international rules of commerce is a fundamental obligation of membership in the World Trade Organization (WTO), and for good reason: advanced economies especially depend on the innovation of inventors and visionaries. According to Christopher Israel, Coordinator for International Intellectual Property Enforcement at the Department of Commerce, American intellectual property industries contribute to more than half of all U.S. exports and represent 40 percent of U.S. economic growth. Fifty-five percent of U.S. companies operating in China were hurt by intellectual property rights violations, according to one survey.[47] Current estimates are that counterfeit and pirated products in China amount to eight percent of China's $2.2 trillion GDP.[48] The U.S. Chamber of Commerce estimates that the global intellectual property (IP) industry loses $650 billion in sales due to counterfeit goods.[49] Additionally, the Chamber estimates that 750,000 jobs every year are lost due to global counterfeits.[50] China is responsible for as much as 70 percent of this counterfeit goods market.[51]

The implications of China's failure to protect IPR can be divided into two aspects: 1) patent infringement serves to advance Chinese commercial interests as a form of government-coordinated industrial espionage that advances China's science and technology capacity; 2) and the failure to enforce intellectual property rights (patents, copyrights, and trademarks) and the existence of intellectual property-related trade barriers violate China's WTO obligations while they relieve pirates of the cost of complying with the rules.

In the case of the former, the Chinese government has deliberately formulated various strategies to "leapfrog" its science and technology development to keep pace with that found in developed countries. In the case of the latter, China has failed to meet its international obligations to protect intellectual property.

Despite repeated promises to do so during U.S.-China Joint Commission on Commerce and Trade meetings, and when it was being considered for accession to the WTO, China has not significantly reduced its copyright infringement rates. According to the U.S. recording industry, 85 percent of sound recordings sold in China in 2004 were pirated, or 17 of every 20 sold there.[52] Across all copyright industries, piracy rates in 2005 remained between 85 and 93 percent.[53]

IPR Violation as a Component of a Coordinated Science and Technology Strategy

Throughout the 1990s the Chinese government consistently developed science and technology plans based on assimilating foreign science and technology into Chinese society while "keeping the initiative in [China's] own hands."[54] As other developing nations have done, the Chinese government set out to appropriate foreign technology in order to "leapfrog" steps in the development of its national science and technology sector.

Central to China's science and technology development is the symbiotic relationship between military and civilian technology. China's National High Technology Research and Development Plan (the 863 Program)[55] was established in 1986 to focus on closing the science and technology gap between China and more technologically advanced nations. The program covers both civilian and military projects, emphasizes civilian projects, and prioritizes dual-use projects.[56] The goals of the 863 Program are to obtain technology and to encourage international participation in its projects.[57]

The 863 Program continues today along with the National Program on Key Basic Research Projects (the 973 Program).[58] The 973 Program, in which the government plays a role similar to that of a venture capitalist, focuses on the growth of small and medium enterprises in China.

One element of the Chinese government's plan for science and technology development is encouraging patent infringement. The government fosters patent infringement in several ways. Chinese state certification requirements give access to foreign product designs to the Chinese Academy of Sciences and other government actors responsible for China's science and technology breakthroughs. On a variety of products, from industrial machinery to tele-

communications equipment to automotive parts, the Chinese government[59] requires a certification mark known as the China Compulsory Certification. "The certification mark serves as evidence that the ... product can be marketed, imported or used [in China]."[60] The certification requires that foreign companies provide product specifications, detailed information on applicable standards, and samples of their products for evaluation.[61] The product specifications then are given to the very organizations that will use them to compete against the IP owner.

Chinese academic communities and enterprises facilitate patent theft through "competitive intelligence."[62] This constitutes the sort of industrial espionage once practiced by the Japanese in the 1980s and 1990s. China established formal "competitive intelligence" operations in 1995 when it established the Society for Competitive Intelligence in China. By using this term common in Western industry, China attempted to make its activities sound like "business as usual." With membership including the Chinese Academy of Sciences and representatives from state-owned enterprises and the academic community, it is currently chaired by a representative of the Chinese company NORINCO.[63] But as of the early 21st century, the operations are still considered to be in the nascent stage by Chinese scholars. In 2001, a Chief Specialist in the 973 Program and a professor at Qinghua University, Luo Jianbin, wrote in China's Science and Technology Daily *(Keji Ribao)* that Chinese companies needed to increase the level of "competitive intelligence" operations on par with those of the Japanese in the early 1990s in order to "leapfrog" China's science and technology development.[64]

Both central and local government entities encourage such industrial espionage. A research website sponsored by China's Ministry of Science and Technology states the importance of a national competitive intelligence model. The author points to Japanese competitive intelligence as a successful system where the central government leads the competitive intelligence activities of the nation.[65] Furthermore, a competitive intelligence system could and should be used to safeguard national defense and public security,[66] placing competitive intelligence strategy in line with the Chinese government's broader science and technology goals.

The Chinese Academy of Sciences sees patents as key to China's "leapfrog" endeavor in science and technology development: "High technology can be mastered more quickly through the use of patent information ... While making use of patents, enterprises can also put inventions and technological innovations under patent protection."[67] The website of China's State Intellectual Property Office demonstrates China's approach to competitive intelligence. The article illustrates that a firm can gain a competitive edge both by patenting its new IP before competitors patent similar products, and by reverse engineering[68] similar items produced by competitors.[69]

The Chinese Government's Lack of Enforcement

Some specific local economies in China rely on the profits derived from the sale of counterfeit goods.[70] Consumers there are freely able to purchase pirated goods though wholesale and retail markets

and need not use any underground economy or black market. In some cases, administrative and law enforcement officials at the local level are directly or indirectly involved in counterfeit goods production and distribution. When the violator is a major employer or taxpayer, local officials refuse to enforce the law to avoid jeopardizing a large source of revenue. The town or city may depend almost entirely on the illegal enterprise to generate funds for education or health care.

In addition, organized crime, particularly in southern China, is involved in the manufacture and distribution of pirated goods. Criminals help extend local counterfeit markets to the international level using direct exports or through connections to organized crime networks in Hong Kong and Taiwan.[71]

The Case of Yiwu

Yiwu, located in the center of Zhejiang province just south of Shanghai, has a population of about 1.6 million and, in 2004, its GDP was $3.6 million.[72] Yiwu is known throughout China and the world for its large commodities markets. However, in Yiwu the wholesale market thrives on counterfeit goods. It was established through local government investment and is now the largest taxpayer in Yiwu. Since the same local government that established the market is also responsible for enforcing laws and regulations against counterfeiting, it is no wonder that local enforcement is nil.[73] The U.S. Trade Representative's Special 301 Report of 2006 pinpoints the province of Zhejiang as one of China's four "hot spots" where there is a severe lack of IPR enforcement.[74] Indeed, Yiwu has become a byword for "fake" in China.

The Yiwu Wholesale Market serves as one of China's largest wholesale centers, and an important distribution center for small commercial goods. Some 410,000 different items reportedly are sold in the market, including fake Gillette razor blades with wholesale prices as low as 65 cents for 10 boxes as opposed to the $9.60 someone in Beijing would pay for a real 10-pack.[75] Two hundred thousand distributors purchase 2,000 tons of goods every day and transport these products to all regions of China and throughout Asia, Africa, and South America. According to Yiwu officials, $2.4 billion worth of goods were sold in 1997, the last year for which figures were made publicly available—more than the total business of most multi-national enterprises in China.[76]

While most Chinese local governments do not appear to have the will to enforce IPR, the central government's resolve to address the issue is not much stronger. While some in the central government take intellectual property rights seriously, others see piracy as a typical path for developing nations attempting to foster economic development. For example, if members of the central government strive to develop a globally competitive company in China and believe foreign technology might facilitate that goal, the government may allow the company to obtain the technology illegally.[77] Various economic justifications are advanced to explain the lack of enforce-

ment. Should the central government initiate a national crackdown on IP infringement, cities like Yiwu would be devastated, with tens of millions unemployed, say advocates of non-enforcement. Either the central government would have to tackle and ameliorate severe economic and social consequences, or it would have to face the impacts of those severe consequences.[78]

The difficulties presented by intellectual property theft in China came into sharp focus during the June 2006 Commission fact-finding trip to China. Contradictions were evident among Chinese authorities over the extent and seriousness of the problem. At the Ministry of Commerce, Deputy Director General Jin Xu insisted that IPR violations in China were "negligible" and that those Americans who thought otherwise were merely being duped by inaccurate news accounts. He insisted that no one in China "knowingly" uses pirated software, for example, because it is likely unreliable. This assertion is in contrast to estimates from some American software companies that 90 percent of the computer software in use on Chinese computers is unlicensed.

Yet, the following day, top officials of the State Intellectual Property Office acknowledged that IPR theft is prevalent and pledged China's cooperation in addressing the problem. China, they pointed out, had only begun to protect intellectual property in the 1980s and still has a considerable way to go to approach the degree of protection in the United States and Europe.

At a dinner with a dozen U.S. businessmen and -women hosted by the U.S. Consul General in Shanghai, one executive estimated that 40 percent of Chinese exports of manufactured goods were counterfeit. No one disputed this remarkably high figure, and when a private investigator remarked with a smile that his anti-piracy business was "very lucrative," the others merely laughed ruefully. While those present agreed that there had been a flurry of anti-piracy edicts from the central government, they also noted that actual enforcement at the local level is practically non-existent. Citing the case of an American consumer products company fighting a losing battle against Chinese counterfeiting, one American explained the reluctance of municipal officials to act by saying, "One local firm was making the labels, one the bottles, and one the shampoo . . . shut it all down and you'd have social unrest." In addition, some U.S.-based businesses with strong brands to protect fear an adverse consumer reaction if the consumers are told they may be buying counterfeit goods. "Certain companies are not happy being portrayed in the press as victims of counterfeiting," said one American CEO.

At one point during their trip to China, the Commissioners visited a shopping mall, the "International Commodity Plaza" near the Port of Shanghai. Inside were dozens of shops selling designer shirts, suits, shoes, handbags, watches, jewelry, electronics, and other goods. Their extremely low prices, misspelled labels, odd packaging, and nervous shopkeepers marked the goods as clearly counterfeit. Such shopping markets openly display their wares in each of the Chinese cities the Commission has visited, often within the full view of law enforcement authorities.

In theory, a developing nation might improve IPR protection within its borders to attract foreign direct investment, and particu-

larly to attract high-value-added industries. But in China's case, the level of foreign direct investment remains high despite the lack of improvement in IPR protection. However, the level of foreign investment in basic research projects remains low compared to the high investment in applied research, as foreign companies protect their key IP from exposure to China's pirates. The "innovation society" China is promoting during implementation of its eleventh Five-Year Plan could lead to increased levels of higher-end IP and thus require an increase in patent protection. But while the central government may have some incentive to improve patent protection in order to protect future Chinese innovations, there is no such incentive to safeguard already-copyrighted material.[79]

Legislation and Enforcement

China does not currently make use of effective measures for enforcing its IPR laws and regulations.[80] Without the vigorous use of effective enforcement tools, any efforts to crackdown on IPR infringement are doomed. According to the USTR, "China's own 2004 data showed that it channeled more than 99 percent of copyright and trademark cases into its administrative systems and turned less than one percent of cases over to the police. The trademark and copyright industries continue to point out that administrative fines are too low to provide a deterrent, and as a result, pirates consider administrative seizures and fines to be merely the cost of doing business."[81]

China already has incorporated in its IPR law Articles 9 to 14 of the WTO's Trade-Related Aspects of Intellectual Property Rights (TRIPS) Agreement.[82] However, the legislation it uses to fulfill its obligations is inadequate. For example, during the 2005 meeting in Washington DC of the U.S.-China Joint Commission on Commerce and Trade, (JCCT), China agreed to enact legislation fulfilling World Intellectual Property Organization (WIPO) Internet treaty obligations. But when the U.S. Trade Representative's office examined the implementing legislation, it found that the legislation fails to provide legal protection and remedies against copyright infringement.

Currently, there are three types of IPR enforcement mechanisms in China, each with its own deficiencies:

- **Administrative Enforcement**, which occurs at the local level, is characterized by dilatory implementation and inadequate penalties. In 2004, there were 51,851 administrative cases of trademark infringement and counterfeiting, only 5,494 of which involved foreign rights holders. The average fine was $620 per case and only 96 cases were referred for criminal prosecution. That same year there were 9,691 copyright infringement cases, 158 involving a foreign right holder, of which only 102 cases were referred for criminal prosecution.[83] It should be noted that because the Chinese administrative enforcement system is opaque, it is not possible to determine the outcome of these cases and evaluate how the system is working in practical terms.
- **Civil Enforcement** provides a specialized, IPR-trained judiciary and nationwide jurisdiction. However, China does not have an independent judiciary. Further, damages awarded by Chinese

courts are difficult for plaintiffs to collect. From January to November 2005, there were 11,468 IP-related civil cases (5,240 copyright, 2,491 patent, and 1,482 trademark cases), about five percent of which involved foreign rights holders.[84]

- **Criminal Enforcement** provides a stronger means of deterring piracy, such as the ability to imprison offenders. A 2004 judicial interpretation lowered the thresholds for criminal cases and included new provisions addressing online copyright piracy, accomplice liability, and the import and export of infringing goods. However, Pei Xianding, senior judge at China's Supreme People's Court, told the Commission delegation in June that further lowering the threshold for criminal prosecution in IPR cases will require an amendment to the relevant law by the National People's Congress. Additionally, questions remain unanswered about how to assign value to seized goods, and prosecutors must prove the piracy activity generated a profit and the merchant knew the goods were counterfeit. Judicial interpretation eliminated a "three strikes" rule that required criminal prosecution for third-time repeat offenders.[85] The pace of prosecution is glacial: China's Public Security Bureau initiated 2,991 IP criminal cases in 2005, with 261 cases concluded and the remaining 2,661 still progressing.[86] While information on the consequences of criminal cases is difficult to obtain and what can be obtained often is difficult to evaluate, U.S.-based copyright industry representatives reported that 52 investigations resulted in 31 indictments. Eighteen of these cases resulted in criminal fines. Twenty-one resulted in jail time; 12 prison terms were suspended; 42 were not suspended.[87]

Export of Counterfeits

The Customs Bureau of the U.S. Department of Homeland Security conducted 3,709 seizures of counterfeit goods, valued at $64 million, originating from China in fiscal year 2005.[88] Products of Chinese origin account for 69 percent of total product seizures at the U.S. border or more than ten times the product seizures of imports from any other trading partner.[89] Still, such seizures at U.S. ports are only a fraction of the actual imports of counterfeit goods. This is partly attributable to the fact that the Department of Homeland Security (DHS) has not placed the seizure of counterfeit goods among its top enforcement priorities. Even so, the value of goods seized by DHS's Immigration and Customs Enforcement (ICE) unit as of April 2006 already had surpassed the total value seized in FY2005, $93 million.[90] The great majority of those items seized were exported by China.

The Commission expects that exports of counterfeit products from China will continue to increase. China previously granted export and import rights only to state-owned trading companies. However, due to its WTO obligations, in July 2004, China amended the law so that any business operator could register to export, eliminating the extra step of using a state-owned company as a middle man, which both legitimate exporters and counterfeiters had to take in order to distribute internationally.[91] This reduces

government control and makes it easier for counterfeiters to export their products.

Health and Safety Concerns

China became the world's largest supplier of counterfeit drugs in 2004.[92] The World Health Organization reports that counterfeit pharmaceuticals of Chinese origin cost pharmaceutical companies $32 billion a year.[93] U.S.- and Europe-based multinational companies investigated 400 interlinked websites marketing and selling counterfeit pharmaceuticals, both lifestyle and non-lifestyle drugs, all manufactured in China.[94] Some major pharmaceutical companies are finding so much counterfeit product that they are expanding their testing facilities.[95] Counterfeit pharmaceuticals pose a serious threat because they may vary in content from the legitimate product—or bear no chemical resemblance to it; indeed, they may be composed of toxic materials. Moreover, it is difficult for consumers to determine if the product is counterfeit or not, as the packaging of counterfeit drugs is often identical to the original and consumers may be unaware of the danger.[96]

Counterfeit alcohol, tobacco, and pharmaceuticals appear to have the highest potential for human injury. However, other counterfeit products also cause safety concerns; Chinese counterfeiters have produced batteries that explode because of faulty manufacturing and engine timing belts that break after only one-fifth the time of the authentic product.[97]

U.S. Industry

U.S. companies' investments in China often provide Chinese access to the technologies of U.S. patent holders. Sometimes technology acquired in this way is diverted to China's illegitimate economy.[98] However, foreign direct investment or any other U.S. industry presence is not required for Chinese IP infringement.

> The U.S. Patent and Trademark Office advises that all U.S. businesses that plan to have an Internet presence, international trade show, or other similar exposure, regardless of whether they plan to manufacture or market in China or engage a Chinese entity, should plan carefully to protect their IP from the threat of Chinese piracy.[99]

Market access barriers prevent U.S. companies from entering and serving the Chinese market efficiently. This provides an opportunity for pirates to operate in the market before or in place of U.S. companies.[100] Market access restrictions, such as delays in regulatory approval and restrictions on distribution rights, "artificially limit the availability of foreign content and thus lead consumers to the black market."[101] U.S. movie makers, whose showings are limited to a handful of films allowed into Chinese theaters, are a frequent target of counterfeiters since consumers cannot see the movies on the big screen. Furthermore, industries not permitted to operate independently in China face additional vulnerabilities.

Former Congresswoman Pat Schroeder, current president and CEO of the Association of American Publishers, testified to the Commission that U.S. book publishers conservatively estimate that they lost $52 million in sales in China due to IP theft in 2005.[102] Foreign publishers are not permitted to operate independently in China and each must partner with a local publisher, some of whom are not interested in protecting foreign copyrights and may, in fact, steal the foreign publisher's copyrighted materials. Furthermore, foreign books are often translated into Chinese and sold without permission. College textbook piracy is rampant at Chinese universities; in fact, universities often photocopy textbooks to sell to the students. Schroeder stated that U.S. publishers could compete with Chinese publishers at a fair price if they were permitted to publish independently in China. However, because of the local partner requirements, U.S. publishers must rely on their Chinese partners to import books, and the cost is far higher.

Chinese enforcement against piracy often consists of merely destroying end products such as pirated DVDs or books, but not removing, confiscating, or destroying the production equipment. The result is that pirates often resume production rapidly after seizure of their current inventory.

Some multinational corporations tolerate a certain level of IP infringement to operate in China, often without publicly complaining for fear of being shut out of the China market.[103] For example, one multinational corporation has thanked the Chinese government for its improvements in IP protection, while at the same time the company's managers in China are grappling with a multi-billion-dollar-a-year loss due to Chinese infringement. Nevertheless, multinational corporations continue to invest in research and development facilities located in China. At the same time, some of these companies that operate in the United States do not provide sufficient data to the U.S. government to enable it to work on behalf of their IP interests in world bodies such as the WTO.

This type of corporate behavior allows the Chinese government to hide behind cosmetic changes to its IPR protection laws and enforcement procedures while undertaking no significant changes.[104] During their fact-finding trip to China in June, the Commission witnessed the consequences of such behavior to some multinational corporations. To battle the growing wave of counterfeiting, one U.S.-based consumer products company was forced to hire private investigators to bring cases to court, only to find that the fines levied on violators were hardly more than an annoyance for counterfeiters who were back in business the next day.

For small and medium-sized enterprises, intellectual property theft can be devastating. This sector is critical to America's innovation-rich economy. Pat Choate of the Manufacturing Policy Project recounted to the Commission his estimate that 45 percent of all U.S. inventions are the products of small and medium-sized enterprises, individual inventors, universities, or research institutions.[105] "Increasingly, counterfeiters are targeting American small and medium-sized enterprises and thereby seriously undermining their ability to compete in global markets."[106]

At present, there are no established means whereby U.S. importers can be confident that they are not importing counterfeit goods

from China and therefore may be incurring liability. According to Dr. Choate's testimony, placing liability on the importer of record could decrease the likelihood that counterfeit goods can enter and be sold in the United States.[107] He told the Commission that such a measure would serve three important purposes: it would combat piracy by reducing its profitability; it would increase protection for Americans from catastrophic failures of sensitive counterfeit goods such as auto and aircraft parts and pharmaceutical products, and from the economic costs of other counterfeit failures; and it would substantially reduce the potential of costly liability claims against American firms when their products have been counterfeited and subsequently have failed to meet legal or warranty obligations.

U.S. Government Efforts

The lack of intellectual property protection has been a frequent topic of conversation during meetings of the U.S.-China Joint Commission on Commerce and Trade. Chinese authorities have given U.S. officials repeated assurances that they are strengthening laws, regulations, and penalties pertaining to intellectual piracy. But Chinese officials have not been able to point to any decrease in violations or even an increase in the penalties assessed on violators.

The most recent meeting of the Joint Commission in April 2006 secured China's most specific promise to date on protection for business software. The Chinese government pledged that future regulations would require computer manufacturers to pre-load computers with authentic operating system software. Government ministries would be required to purchase only computers that were pre-loaded with legal operating systems. Until now, most Chinese computers sold domestically had not been preloaded with software operating systems. This encouraged consumers to shop for the lowest-cost operating systems, which invariably are pirated. But by late September 2006, the International Intellectual Property Alliance reported that it had no evidence that the change had been implemented and could find no increase in software sales that could be expected to come from stricter enforcement.[108]

IPR Protection Agreements China Signed with the United States or with the United States and Other Nations

1979

Agreement on Trade Relations Between the United States and China—includes pledge to protect U.S. patents, trademarks, copyrights, and industrial property in China

1980

China's Accession to the World Intellectual Property Organization

1985

China's Accession to the Paris Convention for the Protection of Industrial Property

1989

U.S.-China Memorandum of Understanding on Enactment and Scope of PRC Copyright Law

1992

U.S.-China Memorandum of Understanding on Intellectual Property Rights. China's Accession to the Berne Convention for the Protection of Literary and Artistic Works

1993

Convention for the Protection of Producers of Phonograms Against Unauthorized Duplication of their Phonograms

1995

U.S.-China Memorandum of Understanding on Intellectual Property Rights

1996

U.S.-China Memorandum of Understanding on Intellectual Property Rights

2001

China's Accession to the WTO—Agreement on Trade Related Aspects of Intellectual Property Rights

The U.S. Trade Representative, recognizing that much of China's intellectual property protection problem is concentrated in specific areas and that enforcement primarily occurs at the local level, is promising a review of Chinese IPR protection efforts at the provincial level this year. In addition, it is reportedly readying an IPR infringement case against China through the WTO.

> *"Faced with only limited progress by China in addressing certain deficiencies in IPR protection and enforcement, the United States will step up consideration of its WTO dispute settlement options. In addition, the United States will conduct a special provincial review in the coming year to examine the adequacy and effectiveness of IPR protection and enforcement at the provincial level. The goal of this review will be to spotlight strengths, weaknesses, and inconsistencies in and among specific jurisdictions, and to inform next year's Special 301 review of China as a whole."* [109]

The U.S. Trade Representative also is expanding the staff dealing with IPR issues at the U.S. Embassy in Beijing. At its Washington headquarters, the Representative has created a China Enforcement Task Force.[110] The U.S. Patent and Trademark Office stationed an IP attaché in the U.S. Embassy in Beijing and is due to add two additional IP attorneys this year.[111]

The U.S. Government is expanding the tools it offers industry to protect its IP. It permits businesses to record trademarks directly with Customs and Border Protection agents. It is educating small and medium-sized enterprises on how to protect their intellectual property. In 2004, the U.S. Trade Representative and the Departments of Commerce, Justice, State, and Homeland Security established the Strategy Targeting Organized Piracy (STOP) Initiative. STOP provides a visible, accessible point in the Federal Government where businesses can report cases of intellectual property infringement through either the stopfakes.gov website or the STOP! hotline. Since its inception, the stopfakes.gov website has received 1.8 million visits, and in the first quarter of fiscal year 2006 the STOP! hotline received 550 calls.

WTO Dispute Mechanism and Other International Trade Remedies

The WTO dispute settlement mechanism should be a key tool to protect the IPR of U.S. businesses in an era of globalization. But the United States has seldom used this tool to address cases involving China even though, in one of the non-IPR-related cases where it was employed, the process led to a satisfactory conclusion: swift negotiations to end a discriminatory practice by China.

The reluctance of the USTR to use the WTO process to adjudicate disputes about whether China is violating its WTO obligations is partially attributable to weaknesses in the quasi-judicial WTO dispute settlement system itself. But there are other reasons. Some delay is due to the historical preference in the Office of the U.S. Trade Representative for entering into negotiations with the governments of offending nations even before filing a WTO case. Even more important is the Representative's emphasis on building the strongest possible case and enlisting other countries as plaintiffs. This effort has been complicated by the reluctance of U.S.-based businesses with operations in China to provide to the U.S. government necessary evidence of intellectual property infringement in China because of fears that Beijing will withdraw favors and investment incentives from any company bold enough to speak out.

The U.S. Trade Representative currently is developing a WTO complaint based on China's failure to enforce international rules against piracy. In order to minimize the risk of retaliation against individual companies by Chinese authorities, the Representative is working through several industry associations and hopes to collaborate on that case with counterparts from the European Union, Japan, and other trading partners.[112]

Although IPR enforcement may be primarily the province of local or regional officials in China, under WTO rules the central government bears ultimate responsibility for all trade-related matters

and, in particular, for the actions (or inactions) of any level of government.[113] The most likely successful WTO case for the United States would be based on Trade Related Aspects of Intellectual Property Rights (TRIPS) Articles 41 and 61, which provide that TRIPS members shall ensure they have effective enforcement procedures against IP infringement.[114] China clearly does not.

In addition to the WTO dispute settlement mechanism, the United States has used other WTO tools to place multilateral pressure on China. Last year, the United States, Japan, and Switzerland made simultaneous requests to China under the TRIPS Agreement to provide information on judicial decisions and administrative rulings related to IP theft.[115] China has failed to provide this information.

SECTION 3: CHINA'S FINANCIAL SYSTEM AND MONETARY POLICIES AND THEIR EFFECTS ON THE UNITED STATES

The Commission shall investigate and report on—

"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."

"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."

Key Findings

- China's financial system is an increasingly important element in Beijing's development strategy and its program to preserve internal stability. China's banks serve the nation's development strategy in several key ways. The banks, which are predominantly state-owned or state-controlled themselves, often are called on to make loans to other state-owned enterprises without attention to creditworthiness, collateral, or other typical lending requirements of banks operating in real market-driven economies. Instead, Chinese banks often are expected to grant low interest loans, carry large amounts of defaulted loans on their books, or forgive such debts held by government-owned companies. In a centrally planned economy such as China's, these loans are a device for subsidizing various activities and specific industries that China's power structure favors. The ultimate goal is to preserve

internal stability and strengthen the control of the Chinese Communist Party.

- Serious and potentially crippling problems threaten the financial system in China and render it vulnerable to excessive volatility and collapse. These problems include a large number of defaulted bank loans, an underdeveloped stock and bond market, an immature insurance system, poor accounting practices, and excessive government ownership and control over the economy, including a refusal to let the currency be governed by market forces. China cannot fully develop a free-market system until these problems are substantially resolved.
- A financial crisis in China would harm its economy, decrease China's purchase of U.S. exports, and reduce China's ability to fund U.S. borrowing, particularly to cover the U.S. budget deficit. An economic crisis in China has the potential to raise U.S. interest rates, thereby placing major additional costs on U.S. businesses and individual consumers and producing dislocation in the U.S. economy. It also could exacerbate Chinese domestic political tensions in an unpredictable fashion. This is why the condition of China's financial system is of concern to the United States.
- The Chinese government's deliberate undervaluation of the renminbi makes U.S. products more expensive to Chinese consumers who therefore purchase fewer of them. Conversely, China's undervalued currency also makes Chinese products cheaper in the United States, and therefore U.S. consumers purchase more of them. The combination is a major contributor to the record-high and still-growing U.S. trade deficit. The undervalued Chinese currency harms American competitiveness and is also a factor encouraging the relocation of U.S. manufacturing overseas while discouraging investments in U.S. exporting industries.
- There has been so little independent regulation of accounting procedures in China that the health of the entire securities and insurance sectors remains questionable. Chinese officials remain highly reluctant to allow independent and objective assessments of the financial system by foreign auditors and credit rating agencies.
- The ownership of U.S. Treasury securities, government agency bonds, and corporate bonds cannot be easily tracked. Foreign holders of U.S. Treasury securities, including foreign central banks, need not disclose their ownership and are not required to do so either by the United States or by international agencies. The lack of accurate data makes it difficult to predict the effect of a sell-off by any one country of dollar-denominated assets.

Overview

China's financial system is in its most critical transition period, facing a December 11, 2006, deadline to adhere to its extensive World Trade Organization (WTO) commitments to liberalize its financial sector. With some notable exceptions, China appears to have made a good faith effort to comply with its WTO obligations in the banking sector. But creating a strong and sound banking, in-

surance, and securities sector—from a patchwork of highly-protected, inefficient, state-owned enterprises—is an enormous task. China's banks are filled with IOUs from delinquent borrowers, many of them government-owned or -controlled and unlikely ever to completely repay the loans. Meanwhile, the assets that served as collateral for many loans have failed to hold their value. Bank loans continue to be made for political rather than financial reasons.

The other two legs of the financial system—securities and the system of property, casualty, and life insurance—may be even worse off and therefore contribute to the overall instability of the financial system. Here, too, decisions have been made for non-financial reasons. Equity investments of some insurance companies have been directed to the shares of certain companies with strong government connections, but low or non-existent profits. Another avenue of safe investments relied upon by Western insurance companies—the corporate bond market—is in its infancy in China. Forced instead to rely on low-yielding Chinese bank deposits rather than higher-yielding, private domestic and foreign equities or bonds, Chinese insurance companies apparently have built up insufficient reserves to cover their future liabilities.

The equity ownership rights of individuals in China—and of foreign investors—have been heavily restricted. Chinese citizens have been mostly limited to low-interest-bearing bank accounts. Shares of stock on Chinese exchanges are therefore thinly traded and subject to large price swings. This further discourages such investments by Chinese citizens. Even as China's economy has grown at a near-10 percent rate, the value of publicly traded companies in mainland China generally has been falling, although prices have been on the rise this year.

U.S. investors have also been discouraged from using the Shanghai and Shenzhen stock exchanges. Even foreign financial giants such as Goldman Sachs, Morgan Stanley, and Citigroup have had to go through extensive licensing procedures and approval processes just to invest in Chinese companies. And such investments may be very risky still. There is little transparency in the Chinese mainland stock exchanges or in the companies themselves.

China's financial markets are due for some substantial changes, however. China's WTO accession agreement requires that it open up its financial system to more outside scrutiny and investment, with the phase-in of the new changes to be completed by December 11, 2006. If China complies with its looming deadline, the nation's financial system will experience a liberalization whose scope and speed have seldom been seen before. Only two precedents exist: after the collapse of the Soviet empire, Russia and some of the Central European, former Communist bloc countries underwent a rapid change. Russia's system quickly became a free-for-all and devolved into criminality. Central Europe, whose pre-World War II system was capitalistic, fared much better.

Unfortunately, at the time this report is being finalized, Chinese authorities announced that the opening of Chinese securities firms to partial foreign ownership may be delayed for a year past the December 2006 deadline. This is in contrast to the willingness of authorities in Beijing to allow up to 25 percent foreign ownership of

Chinese banks, and their pledges to allow foreign banks to establish branch offices in China.

The Banks Must Climb Out of a Deep Hole

Of all the changes in the financial system contemplated by the WTO agreement, the Chinese government is most enthusiastic about implementing those relating to banking. Beijing realizes the country must have a stronger banking system to take the economy to the next step in the process of globalization. To help accomplish that, China has already privatized a significant part of its banking sector and has, in some cases, beaten its deadlines for allowing foreign investment in the sector.

Until now, China's banks have been the primary vehicle for financing business investment, and while the securities industry undergoes modernization, banks likely will retain their importance. China's banks have enjoyed a near monopoly on the impressive savings of the private and public sectors—estimated to be as high as 50 percent of GDP. Clearly, a shortage of savings and deposits is not China's banking problem. With a foreign currency reserve of about $1 trillion, the People's Bank of China has the ability to throw the banks a stout lifeline.

Indeed, China has already spent heavily to bail out its banking system, primarily through government purchases of bad loans. A low estimate puts the cost so far at $60 billion since 1998.[116] Another estimate using similar methodology estimates the cost at $95 billion.[117] According to Michael Petit, managing director of Standard and Poor's corporate and government ratings in Asia, the Chinese government may have already spent or committed $400 billion to create a solvent banking system. Still, he says, problem loans represent an additional $500 billion to $650 billion.[118] [119]

A large number of the bad loans originated with the practice of state-owned banks lending almost exclusively to state-owned businesses. Dr. Kellee Tsai, a political scientist at Johns Hopkins University and authority on the Chinese banking system, noted that the government-owned banks were originally established as a reform measure in the 1980s because in prior years, money had flowed directly from the government treasury into the state-owned businesses. "So all the employees within the state banking system were afraid to lend to private entrepreneurs because they thought, 'Well, if they don't repay, I could lose my job; it would be disastrous.' And they weren't trained to evaluate clients according to standard market ways of evaluating creditworthiness. They weren't looking at their credit history and collateral."[120]

In short, yesterday's reform became today's problem. Official Chinese estimates show that nearly 80 percent of the bad loans on the books of Chinese banks are attributable to "conflicts of interest where local governments were the owners of some of the banks and financed unnecessary projects."[121] Standard and Poor's estimates the proportion of loans in default at the end of 2005 was between 20 percent and 25 percent.[122] To some observers, this high level of problem and defaulted loans shows that state control over the banking system is still extensive. "Everybody assumes that China wants to be capitalist and that socialism with Chinese characteristics is really code for capitalism, but it's not," Gordon Chang, au-

thor of the book, *The Coming Collapse of China,* told the Commission.[123]

Now, China hopes to tap Western management expertise by allowing partial foreign ownership and participation in its giant banks. The thinking: Western banks will make lending a more rational process without the cronyism and favoritism of the past, and this will improve the performance of the Chinese banks.

But some experts fear that China may not be offering the Western banks enough incentive—a sufficiently large ownership stake—to attract their involvement and enable them to introduce necessary reforms. No single foreign bank can own more than 20 percent of a Chinese bank and total foreign ownership cannot exceed 25 percent. This will be the case even after full implementation of China's WTO commitments. So far, the ownership levels have been too low to allow foreign banks to force reforms and old hands at China's banks have resisted. Chinese banks, for example, have created new positions for loan and risk officers, but they have staffed these new positions with the same employees using the same analytical tools. Under those officers, Chinese banks have amassed non-performing loans which are now equal to 7.5 percent to 9 percent of total bank deposits according to official figures, but may be as high as 25 percent according to Standard and Poor's.[124] (The People's Bank of China reported that total deposits in Chinese banks in December 2004 amounted to 24 trillion renminbi [about $3 trillion].)[125] If Standard and Poor's high estimate is correct, non-performing loans could amount to $750 billion.

China also must prepare for the day when its GDP growth rate dips below nine percent, possibly pushing up the number of defaulted and problem loans, which are now on the decline. As more state-owned enterprises are forced to adopt market-driven business practices, more of them will either fail or reveal their profits to have been illusory. Banks will have to be strong enough to write down those loans and still remain solvent. And as the Chinese securities market grows, banks will lose their monopoly on the depositors who are offered so few alternative opportunities to grow their money in China. But so far, China has not faced up to the challenges posed by the many bad loans held by its banks. In September, the central government decided to exempt more than 2,000 of its worst performing state-owned enterprises from the new bankruptcy law passed only the month before, demonstrating a questionable commitment to dealing with the problem.[126]

To its credit, China has managed to establish a regulatory regime for banking, headed by a central bank modeled on the U.S. Federal Reserve Bank. The People's Bank of China sets short term interest rates and bank reserve requirements, and manages the foreign currency reserves. In spite of this effort, implementation falls short.

The formal banking system is failing entrepreneurs. If China is to move to a free market economy, Chinese entrepreneurs must be able to finance their ventures. This will require a banking system that meets their needs, which they currently do not have. As late as mid-2006, only one percent of the loans from state-owned banks had gone to Chinese entrepreneurs, according to Dr. Tsai. Instead, small businesses rely on a scattered, unregulated, and informal

lending system estimated by the People's Bank of China to account for $118 billion or seven percent of GDP.[127] The default rate in this informal system is far lower than it is among the large banks. In the informal system, "Assets will be confiscated, fingers will be taken . . . kids will be kidnapped—you name it," Tsai told the Commission. "They have very low [non-performing loan] rates." The size of this informal banking sector is yet another symptom of the inadequacy of the formal banking sector.

The health of Chinese banks is a concern for the United States for several reasons. Their weak state makes the entire Chinese financial system vulnerable in a crisis. A Chinese banking crisis could even imperil the entire Chinese economy, whose growth has accounted for about a quarter of global growth in recent years. Given China's size, the impact of a financial and economic collapse could be global and severe.

In a crisis, as domestic demand dried up, China's export sector would be even more important to the overall economy and could receive even more government support. The financial and political turmoil in China in the spring of 1989, for example, had no effect on China's export sector, which "just continued to hum along as if it were in a separate country."[128] An economic crisis in China would also cut into U.S. exports there, particularly of such capital goods as commercial aircraft, currently among the top U.S. exports to China. Yet the U.S. trade deficit with China might also accelerate since the Chinese export sector would stay strong.

Meanwhile, unemployment in the state-owned sector could be expected to grow with potentially devastating consequences for the population.[129] The social safety net is highly porous. National unemployment benefits do not exist, only about 15 percent of the population is covered by any type of pension, and many of those pensions are underfunded.

Other Problems in the Financial Sector

The other two legs of the financial system stool—stock and bond brokerages and the insurance industry—are in even worse shape than the banks. In theory, the nation's stock exchanges should be facilitating the transition from a state-owned economy to a private, market-based system. But whenever the government hints it is going to sell its holdings in a particular firm, investors try to sell first to avoid the price drop that results from putting up so many shares for sale so quickly. This has been creating volatility and diminishing confidence in the market.

There are structural reasons for the difficulties in the exchanges as well. Unlike the banking system, securities dealers are not welcoming competing, foreign companies to help in the transition. In fact, in September, Chinese regulators announced a one-year suspension of partial sales of brokerages to foreign investors.[130] Even before this suspension, foreigners were limited to joint ventures and ownership was capped at 33 percent.[131] (Among its WTO commitments China pledged to fulfill by December 11, is to increase to 49 percent the proportion of a joint venture a foreign securities company can own.) Thus far, of the $24 billion that foreign investors have expended in buying into financial services companies in

China since 2001, only $600 million has been spent in buying shares of securities firms.[132]

The insular nature of the securities system also makes it vulnerable to rapid price swings and loss of public confidence. It also reduces the effect of regulations. After all, as many as three-quarters of all private financial transactions may be occurring outside the formal financial system, according to one estimate.[133]

In the past few years, China has established a foreign currency market, a commercial paper market, a corporate bond market, and the "back offices" and trading systems to implement them. This infrastructure gives China the potential to continue to liberalize its financial system. Perhaps most important for the United States in the short term, this infrastructure would allow China eventually to adopt a more flexible exchange rate regime. Nevertheless, Beijing has decided not to relax its tight control over the value of the renminbi relative to the dollar.

China has only slightly loosened the controls on its insurance companies to allow them to invest abroad. Without such investment, insurance firms cannot be certain of steady returns that help them to cover their losses and to keep premiums affordable. Domestic stock markets have not proved to be a reliable vehicle for the Chinese insurance companies to hedge their risks.

Foreign insurers face discrimination. They are required to apply for licenses serially while Chinese insurers can apply concurrently. That is, foreign insurers must await approval of one application before applying for another.[134] This is apparently intended to slow the entry of foreign and U.S. firms into the fast-growing Chinese insurance market. It is a clear violation of WTO rules on "national treatment." Insurers are engaged in what they call a "dialogue" with Chinese regulators and say they are making progress on this issue.

Information Flow Is Increasingly Restricted

A free flow of information is essential to the efficient functioning of markets. Information flowing from consumers to producers is what allows the capitalist system to avoid the production bottlenecks and the waste that plague planned economies. But China refuses to recognize this principle and has been enacting ever-larger barriers to the free flow of information.

Chinese regulators have sought to prevent independent credit rating agencies such as Standard & Poor's, Moody's, and Fitch from establishing operations in China. The work of such credit rating agencies is essential. They evaluate the underlying risk of bond issuers and therefore impose discipline on the borrowing companies that know that drops in their ratings will lead to higher borrowing costs. This helps keep the system honest and understandable and avoid nasty surprises.

But Chinese authorities want to limit foreign credit rating agencies to a minority stake in joint ventures, which would reduce their independence and credibility. Even worse, regulators want to use their licensing authority to control the hiring of credit analysts and their various activities. Trying to control the flow of any negative news would render the credit rating system useless and make it extremely difficult for all investors to make informed choices. A com-

promised credit rating agency system, by obfuscating potential problems, increases the chance a small event will turn into a financial crisis, with cascading effects both within and outside China.

The testimony to the Commission of representatives from Standard and Poor's, one of the major credit rating agencies, was instructive. The company has been active in China since 1991, evaluating the credit-worthiness of Chinese government debt and its issuance of U.S.-denominated sovereign debt by the central government. The company has maintained an office in Beijing since 2005, but is allowed to issue ratings on Chinese companies only from its Hong Kong office.[135] This is in marked contrast to such other Asia-Pacific nations as Japan, Singapore, and Australia, which understand and support the market function of independent ratings agencies. Further hampering the establishment of an independent ratings system are the competition and confusion among four regulatory bodies that claim jurisdiction over rating agencies operating in China.

In addition to restrictions on rating agencies, China has moved aggressively to limit dissemination of news and financial information by foreign news media. In September, China's government issued strict curbs on the dissemination of news in China. In particular, international financial information companies such as Reuters Group PLC and Bloomberg LP are prohibited from selling their information and financial news directly to Chinese customers such as banks and brokerages.[136]

The new restriction, issued by China's official Xinhua news agency, seems designed to accomplish two goals: the first of these is to bring foreign news agencies under the control of Chinese government authorities, a continuation of China's efforts to limit independent dissemination of news within China, particularly news that points up government mismanagement, civil unrest, and man-made and natural disasters. The new restriction makes it illegal to distribute articles that "undermine China's national unity, sovereignty, and territorial integrity" and that "endanger China's national security, reputation and interests." The restrictions also are intended to persuade foreign news media to avoid politically sensitive subjects such as corruption of government officials, and the activities of civil rights associations and leaders on behalf of the Chinese people when their interests conflict with those of the government.

China Manipulates its Currency to Gain a Trade Advantage

China's policies on trade and investment depend directly on the government's strict control of the value of the renminbi.[137] Rather than allow the nation's currency to seek its own value in the international currency markets, the People's Bank of China dictates the value of the renminbi and allows only small fluctuations. The central bank requires that dollars entering the country be traded for renminbi at a rate of about 8 renminbi to one dollar. By artificially setting the renminbi at a value that most economists believe amounts to a 15 percent to 40 percent discount against the dollar, China provides its exporters with an equivalent price discount.[138] This practice violates both the letter and the spirit of the rules of the WTO and the International Monetary Fund, which prohibit the

manipulation of currency values in order to secure a trade advantage.

This practice harms U.S. companies in a variety of ways and distorts the trading relationship between the United States and China. The policy attracts foreign investment to manufacturing in China by automatically discounting the purchase price of Chinese land, machinery, construction costs, and manufacturing inputs. The exercise also puts competing U.S.-based manufacturers at a disadvantage by making their exported products more expensive to Chinese consumers. American small and medium-size enterprises are particularly disadvantaged by having to compete for U.S. market share with Chinese exporters who enjoy the subsidy of an artificially undervalued renminbi. Smaller U.S. companies often don't have the cash, credit, experience, or willingness to shift large amounts of capital abroad. So many of the smaller U.S.-based manufacturers find themselves competing for American customers with the large multinational corporations now producing at a discounted rate in China.

This practice is "export-led growth with a vengeance," according to C. Fred Bergsten, president of the Institute for International Economics.[139] China's surplus, according to Bergsten, "is an off-budget job and development subsidy which enables them to under-price their products in world markets, and thereby enables them to export some of their unemployment to the rest of the world."

This emphasis on export earnings puts Chinese citizens—although not the companies—at a disadvantage. The standard of living of Chinese citizens is below what it would be if Chinese firms produced goods for domestic consumption.[140] Additionally, because the Chinese government has been dismantling the social safety net previously provided by state-owned and state-controlled companies, Chinese workers must now save money for their retirement and health care; pension plans and health insurance cover less than 20 percent of the population. Expanded government programs in such areas as education and health care could allow Chinese workers to save less of their income and to consume more, leading to more domestic-led GDP growth. Instead, government and business savings, as well as household savings, have been on the rise.

A secondary effect of China's policy of currency manipulation is the huge and growing trade surplus accruing between China and the rest of the world. China now enjoys the largest current account surplus in the world, a position held by Japan until 2006.[141] That surplus has helped push Chinese foreign exchange reserves beyond $900 billion and on a path to break the $1 trillion mark this year. If China were to allow its currency to move toward a market-driven level, many economists expect that the growing imbalances would decline. If the dollar and other currencies decline in relation to the renminbi, investing in China would become more expensive for foreigners, as would the purchase by foreigners of Chinese raw materials, parts, machinery, and other inputs. This would lead to less foreign investment in China relative to other destinations. After a period of adjustment, it is reasonable to assume that China's trade surplus—and the trade deficit of the United States—would decline, although few economists have undertaken the empirical research necessary to quantify the dollar estimate of this decline.[142]

The U.S. Treasury Department has argued that it would be in China's interest to allow the value of the renminbi to be set by market forces rather than central government fiat. China has begun to acknowledge that its projected 11 percent GDP growth rate this year is not sustainable and has taken some steps to cool the economy. For example, Chinese authorities have issued tighter banking regulations in an effort to reduce speculation in commercial and industrial real estate. Authorities are increasingly concerned that too few people in China receive benefits from an export-led boom dominated by foreign multinationals. The already-substantial economic inequality is increasing between the coastal, urban elite and the rural dwellers who make up 45 percent of China's population. Because of China's export-oriented industrial policy, of which the renminbi valuation policy is a key part, many in China cannot consume the very products that their factories are producing. Meanwhile, cheaper imported goods are kept out of the market by the policy of keeping the renminbi at such a low value. In spite of these and other arguments that favor allowing the renminbi to reach a more market-oriented value, Chinese economic officials have said they prefer to emphasize stability.[143]

Possible Effects on the Overall U.S. Economy

The United States will run a current account deficit of over $800 billion, or approximately seven percent of GDP, in 2006. This is historically an extremely high level that no other country has ever been able to sustain for any significant period. The danger is that the U.S. economy could suffer a precipitous decline if the ability of the United States to borrow ever greater amounts should end abruptly. Interest rates and inflation might suddenly soar as the dollar fell and the stock market crashed.[144]

For now, however, the effect on the U.S. economy of the huge purchases of U.S. Treasury, government agency, and corporate bonds by China and other East Asian countries was summed up this way by Dr. Bergsten; "It's great to live on those credit cards, as long as nobody calls in the balances." Another witness, University of Maryland economist Peter Morici, added up the consequences to the U.S. economy, some of which are beneficial in the short term, but all worrisome over the long term: currently, interest rates are lower than they would be without China's purchases of U.S. debt instruments. The rate of growth is therefore higher in some sectors, said Morici, but employment and wages in the United States are lower than they would be otherwise.[145] Francis E. Warnock, an economist at the University of Virginia, said in written testimony submitted to the Commission that it is reasonable to assume that interest rates in the United States are up to one-and-a-half percentage points lower than they otherwise would be without the lending from China.[146]

In one sense, economists are still feeling their way through the discussions of these huge imbalances and the potential for rapid shifts in the value of the dollar. The size of today's trade imbalance is nearly unprecedented; large amounts of currency are sent across the globe nearly instantaneously, thanks to computerized trading. This new, virtual, paperless trading floor complicates America's ability to track and manage certain aspects of its finances. For ex-

ample, little is known about the amount of Chinese investments in U.S. bonds because U.S. statistical agencies don't require bond holders or bond issuers to disclose such information. Furthermore, many bonds are held on behalf of investors by third parties, often in tax havens such as the Cayman Islands. This much is known, however: Chinese investors primarily engage in portfolio investments and not in direct investing, such as the outright purchase of U.S. companies, factories, or commercial real estate.[147]

While some U.S. officials cite a precipitous sell-off of the dollar as one of their biggest worries, most experts believe this is an unlikely scenario. One reason: this would cause the People's Bank of China's bond portfolio to collapse in value as well. It is far more likely that China's central bank, along with other Asian central banks, will diversify its holdings away from the dollar rather than rush them to market. As long as such a shift occurs slowly, U.S. capital markets will adapt with only a minimal impact on the real economy. Regardless, the United States would be able to better predict potential problems resulting from the movement of foreign capital invested in the U.S. economy if there were tracking systems better suited to monitor how individual countries invest in the United States.

RECOMMENDATIONS

Currency manipulation

- The Commission recommends that Congress urge the Administration to take to the World Trade Organization (WTO) and the International Monetary Fund (IMF) a complaint about China's manipulation of its currency. This manipulation contravenes both the letter and the spirit of WTO rules and the IMF charter.
- The Commission recommends that Congress pass legislation to modify the requirements of the Treasury Department's biannual report on countries that practice currency manipulation, by making it clear that countries that artificially peg their currency in order to gain an export advantage should be identified as violating the principles of international trade. The Commission also recommends that Congress eliminate the requirement that a country must be running a global trade surplus to be designated a currency manipulator.[1]
- The Commission recommends that Congress enact legislation to define currency manipulation and loan forgiveness as illegal export subsidies subject to countervailing duty penalties levied against an offending country's exports.
- The Commission recommends that Congress pass legislation to allow the U.S. Department of Commerce to impose countervailing duties against non-market economy subsidies. (Although current U.S. practice does not allow such duties to be imposed against non-market economies, such actions are permitted by the WTO.)

[1] China currently is running a large global current account surplus. The International Monetary Fund estimates China's global current account surplus will be $184 billion in 2006, having surged from $68.7 billion in 2004 and $160.8 billion in 2005. In the 1990s, however, China ran far smaller surpluses and even a deficit in 1993. This recommended change would allow the Treasury Department to designate China as a currency manipulator even during a year when China's current account is in balance or in deficit.

Accounting integrity

- The Commission recommends that Congress direct the Treasury and Commerce Departments to examine how the collection of data regarding foreign investment in the United States can be improved, placing particular emphasis on the feasibility of tracking how foreign central banks invest their reserves in dollar denominated assets.
- The Commission recommends that Congress encourage the executive branch to protest any Chinese restrictions on the free flow of financial information.
- The Commission recommends that Congress urge the executive branch to open negotiations with China to secure approval for foreign credit reporting agencies to provide uncensored ratings of all Chinese securities, and to obtain Chinese central government agreement that Chinese regulators will drop licensing and regulatory requirements that dictate criteria for the hiring of ratings analysts.

Dispute resolution

- The Commission recommends that Congress urge the U.S. Trade Representative to press ahead aggressively with a WTO case against China for its manifest failures to enforce intellectual property rights, selecting the best of many potential cases in order to establish a strong precedent, and that Congress urge the U.S. Trade Representative to enlist other nations to join in the case.
- The Commission recommends that Congress monitor the recent steps taken to strengthen and enlarge the international trade law enforcement office within the Office of the U.S. Trade Representative and, if the Representative needs additional resources to investigate and prosecute dispute settlement cases before the WTO, that Congress provide those resources.
- The Commission recommends that Congress direct the Administration to increase the number of intellectual property attachés in China from the Office of the U.S. Trade Representative, the U.S. Patent and Trademark Office, and the Departments of State, Commerce, Justice, and Homeland Security, and provide sufficient funding to the parent agencies to support these additional attachés.

Fair trade

- The Commission recommends that Congress urge the U.S. Trade Representative to strengthen its annual review of China's compliance with WTO rules by adding conclusions and recommendations to its report. (Congress instituted the requirement that the Representative prepare this report when it granted China permanent normal trade relations as part of China's admission to the WTO.)

Criminal penalties for intellectual property rights violations

- The Commission recommends that the U.S.-China Interparliamentary Exchange raise with the National People's Congress the need to lower the threshold for criminal prosecutions of Chinese intellectual property rights violation cases.

ENDNOTES

1. In 2003, China surpassed Japan to become the third largest trading partner. In 1999, China surpassed Germany to become the fourth largest trading partner.
2. This is a 20 percent increase in exports and 24 percent increase in imports over 2004. Also, it is a 118 percent increase in exports and 138 percent increase in imports since 2001, the last trading year before China's WTO accession. U.S. Commerce Department, *Country and Product Trade Data,* www.census.gov/foreign-trade/statistics/country/index.html.
3. USCC calculations based on U.S. Commerce Department data.
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8. Ted Fishman, "How to Stop Intellectual Property Theft in China," *Inc. Magazine*, June 2006. www.inc.com/magazine/20060601/ip-theft.html.
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117. Charlene Chu, "The Chinese banking System," *Fitch Country Report,* June 2006, p. 8.

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119. Official statistics from the China Banking Regulatory Commission put the total for non-performing loans in the commercial banking sector at 1.28 trillion renminbi or 7.5 percent of all loans in the first half of 2006. S&P estimates the total to be much higher, between 3.97 trillion renminbi and 5.16 trillion renminbi. Fitch Ratings puts the total at 3.78 trillion renminbi and Ernst & Young estimated the total at 7.15 trillion—more than $900 billion—last May, although the firm later agreed to review its estimate after PRC protests.

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125. People's Bank of China, *Sources and Uses of Credit Funds of Financial Institutions.* www.pbc.gov.cn/english/diaochatongji/tongjishuju/gofile.asp?file=2004S1.htm.

126. Francesco Guerrera, "Bankruptcy Reprieve for China Firms," *The Australian,* September 26, 2006. wwwtheaustralian.news.com.au.

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129. Matthew Forney, "Workers' Wasteland," *Time Magazine Asia Edition.* www.time.com/time/asia/covers/1101020617/cover.html.

130. "Great Stall of China" *The Financial Times,* September 15, 2006.

131. U.S.-China Economic and Security Review Commission, *Hearing on China's Financial System and Monetary Policies,* testimony of Steven Judge, August 22, 2006.

132. U.S.-China Economic and Security Review Commission, *Hearing on China's Financial System and Monetary Policies,* testimony of Steven Judge, August 22, 2006.

133. U.S.-China Economic and Security Review Commission, *Hearing on China's Financial System and Monetary Policies,* testimony of Kellee Tsai, August 22, 2006.

134. U.S.-China Economic and Security Review Commission, *Hearing on China's Financial System and Monetary Policies,* testimony of John Dearie, August 22, 2006.

135. U.S.-China Economic and Security Review Commission, *Hearing on China's Financial System and Monetary Policies,* testimony of Vickie Tillman, August 22, 2006.

136. Andrew Browne, "Beijing is Cracking Down on Foreign-Media Access," *The Wall Street Journal,* September 11, 2006.

137. China freely publishes its monetary goals and policies, including details of the "managed float" of its currency against a basket of currencies, the U.S. dollar chief among them.

138. U.S.-China Economic and Security Review Commission, *China's Financial System and Monetary Policies,* testimony of Bradley Setser, C. Fred Bergsten, Peter Morici, August 22, 2006.

139. U.S.-China Economic and Security Review Commission, *Hearing on China's Financial System and Monetary Policies,* testimony of C. Fred Bergsten, August 22, 2006.

140. China's export-led GDP growth rate is due in part to its policy of emphasizing exports over domestic consumption. That is, its workers are expected to labor to produce goods for export earnings rather than to produce goods meant for internal consumption. In addition, Chinese economic policy encourages and even directs Chinese citizens to save, rather than spend, their money. As a result, consumption in China represents less than 40 percent of GDP versus 70 percent of GDP in the United States.

141. The International Monetary Fund estimates China's current account surplus will be $184 billion in 2006 and Japan's will be $167 billion. China's surplus in the first half of 2006 was $92 billion. China's current account surplus is expected to reach $206 billion in 2007. The IMF estimates the U.S. current account deficit in 2006 to be $869 billion.

142. A 2006 study by the Federal Reserve Bank of San Francisco, looking at historical data, shows that a 10 percent change in the exchange rate leads to a 4 percent change in the prices of imported goods in the United States, although changes in other countries run at 6 percent. At lower rates of change in the currency, such as 10 percent, exporters and distributors accept lower profit margins to retain market share. They would likely be less willing to moderate price increases at a currency rate change of 40 percent, for example. Diego Valderrama, "The Exchange Rate-Consumer Price Puzzle," *Federal Reserve Bank of San Francisco, Economic Letter No. 23,* September, 2006.

143. Azam Ahmed, "Dollar Rises on Fed Comments; China is Wary of Pressuring Yuan," *The Wall Street Journal,* August 23, 2006, C3.

144. The IMF has issued several warnings about a disorderly adjustment. Iain MacDonald, "IMF Warns Lingering Imbalances May Spur Volatile Fall in Dollar," *Wall Street Journal,* 13 September 2006, p. A8.

145. U.S.-China Economic and Security Review Commission, *Hearing on China's Financial system and Monetary Policies,* testimony of Peter Morici, August 22, 2006.

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147. U.S.-China Economic and Security Review Commission, *Hearing on China's Financial System and Monetary Policies,* testimony of Francis E. Warnock, August 22, 2006. U.S. Treasury Department survey data of some investment firms purchase and sales of Treasury securities can be found at www.ustreas.gov/tic/s1—41408.txt, but it does not include third party holdings.

CHAPTER 2

CHINA'S GLOBAL AND REGIONAL ACTIVITIES AND OTHER GEOSTRATEGIC DEVELOPMENTS

SECTION 1: CHINA'S REGIONAL ACTIVITIES

> The Commission shall investigate and report on "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."

Key Findings

- China's stated diplomacy promotes friendly relations with other countries, regional peace and stability, and development of complementary economic cooperation.[1] However, some of China's international relationships, namely those with totalitarian, repressive governments, conflict with U.S. values.
- China's regional activities in Latin America, Africa, and the Middle East and around East Asia are beginning to assume the character of a counterbalancing strategy vis-à-vis the United States. That is, China's support for rogue regimes and anti-American governments and groups in vital regions serves an international purpose: to balance American power, create an alternative model of governance, and frustrate the ability of the international community to uphold its norms.
- China's economic development policies can exacerbate instability in volatile regions. Beijing's export-led growth has magnified trade imbalances, and complicated and inhibited local economic development strategies, in some instances undermining the ability of governments in those regions to prevent or respond to the rise of terrorist groups.
- China's strategy to isolate Taiwan is manifest in its foreign policy actions around the world, including encouraging other nations to switch their recognition to the People's Republic of China, and preventing Taiwan from participating in international organizations.

Overview

During the past decade, China has energetically expanded its outreach to the world. Dr. Ariel Cohen, Senior Research Fellow at The Heritage Foundation, testified to the Commission that "China has departed from its traditional isolationist philosophy and is seeking to project its influence abroad. China is, at present, a regional power with global aspirations, and if it continues on the path of economic growth and projection of influence, its aspirations may be realized."[2]

China's foreign policy goals include creating opportunities for continued domestic growth, isolating Taiwan internationally and encouraging other nations that recognize Taiwan to change their recognition, and ensuring continued rule by the Chinese Communist Party. China views peace and stability at home as necessary ingredients for economic growth.[3] Economic growth, in turn, legitimizes and perpetuates Communist Party control. The result of this focus is China's increased integration in world markets, the development of global economic interests, and the emergence of mechanisms designed to protect these interests. Deputy Assistant Secretary of State for East Asian and Pacific Affairs Thomas Christensen expressed to the Commission the hope that as China's involvement around the globe increases, China will join the United States "in actions that will strengthen and support the global system that has provided peace, security, and prosperity to America, China, and the rest of the world."[4] Today, however, China's international activities fall far short of this measure.

China's Global Activities

Africa

China's strategy for African relations is in great part driven by its need to obtain resources for its economy, strengthen its own influence and leadership in developing countries, and create a market for Chinese goods. Its presence in Africa is expanding, but China is still learning how to translate that presence into influence from which it can reliably benefit. Dr. Ernest Wilson, professor at the University of Maryland, told the Commission that "China is on a new glide path, and [a] new strategic direction, in experimenting with a variety of ways to use the tools of statecraft to open the doors to get privileged access to energy and resources in Africa and elsewhere."[5] China relies upon a combination of trade, military assistance, development assistance, corruption, and diplomacy to foster long-term partnerships with rulers and governments in African countries that possess resources it wants to obtain, especially petroleum.

African countries, namely Angola, Nigeria, the Republic of Congo, and Sudan, provide China with 20 to 30 percent of its current petroleum needs.[6] One facet of China's strategy is to diversify its sources of energy. For example, it will take risks in countries such as Sudan that are bypassed by Western oil companies. Dr. Wilson observed, "We should expect . . . that as Chinese companies strive to become more globally competitive they will engage in more aggressive sales and marketing in Africa . . . within but also beyond the natural resources sectors."[7]

While in theory this trade could complement the activities in Africa of the United States and other Western nations, in practice it often contradicts multilateral efforts to improve democracy, human rights, and governmental accountability and transparency. China professes a policy of non-interference "with the internal political, institutional, and policy arrangements of its partners."[8] When President Hu Jintao visited Africa in April 2006, he "reiterated China's policy of making business deals without any expectation that governments will improve democracy, respect human rights, or fight corruption."[9] However, in reality China facilitates situations that other countries will not accept. For example, in September 2006 in Zambia, after opposition candidate Michal Chilufya Sata threatened to break off diplomatic relations with China in the run-up to Zambia's presidential elections, China actively supported the incumbent Levy Mwanawasa and offered new foreign aid programs to the country.[10] Also, in 2005, China obstructed efforts by the United Nations to investigate President Robert Mugabe of Zimbabwe for his "clean-up campaign" that entailed police destroying slums and markets and depriving 700,000 Zimbabwean citizens of their homes or jobs.[11] In addition, China donated blue-glazed roof tiles for the President's $13 million presidential palace. It appears that Chinese contracts for providing hydroelectric generators to Zimbabwe correlate to these actions.[12] Such actions make the prospect of a relationship with China more appealing to the recipients than a relationship with the United States. Senator James Inhofe told the Commission that "the saying in Africa is, 'the United States tells us what we need and China gives us what we want.'"[13]

China's trade and investment activities are often linked with delivery of humanitarian and economic aid packages. According to Dr. Wilson, China is "getting creative" in places like Nigeria with agriculture, health care, water, and education/training projects.[14] In addition to providing aid there, China has forgiven roughly $1 billion in bilateral debt of African nations.[15]

China's aid packages and projects typically focus on infrastructure development, such as constructing (or paying for the construction of) highways, railroads, and improved power supply systems; these efforts not only serve the interests of the recipient nation, but have a secondary purpose of supporting Chinese business investments in the area.[16] Further, China's foreign aid promotes China's reputation as an international power and significant actor. China is seeking, and not infrequently obtains, diplomatic support as a result of its international activities—as illustrated in early August 2006 when Chad switched its diplomatic recognition from Taiwan to the People's Republic of China.[17]

To further expand the appeal of China as an international partner, China has been willing to sell military equipment and arms (primarily small arms) to both African governments and, in some cases, rebel groups seeking to overthrow governments—for example, in Liberia.[18] Between 2004 and 2005, Zimbabwe negotiated with China to acquire 12 jet fighters, six other jet aircraft, 100 military vehicles, and a radar intruder-detection system for President Mugabe's home.[19] Prior to Zimbabwe's 2005 election, Chinese businesses provided radio wave jamming devices to be used against

anti-Mugabe radio stations.[20] China provided this support despite the fact that the United States and the European Union have sanctioned Zimbabwe for its abysmal human rights record.

Equally troubling is China's sales of small arms and equipment to the Sudanese government, and the role those arms play in the continuing conflict in the Darfur region. (See the case study on China's relationship with Sudan for more information—below.)

China's investments in Africa primarily support capital-intensive resource production industries including mining and oil refining, but typically do not foster the development of nascent African industries such as manufacturing. In essence, China is displacing industries considered a foundation for long-term economic growth. The South African Textiles Union estimates a loss of 60,000 jobs from a "tsunami" of imports from China,[21] which has prompted South African leaders to negotiate with China in an attempt to reduce the negative effects on South Africa's labor force.[22]

Moreover, China often imports Chinese workers to carry out its investment projects rather than hiring local African labor.[23] The failure to employ African workers means the nations where China's investment projects are being pursued will not benefit from transfer of skills, widely considered to be an important element of investing in developing countries. The Chinese approach means that there will be little if any increase in the personal income of the host nations' workers.

In sum, Dr. Wilson maintained, "To the degree that . . . African industry is undercut, then the U.S. and other nations need to be concerned about the higher risk of economic stagnation, further political instability, humanitarian crises, and providing fertile ground for the growth of terrorist groups."[24]

CASE STUDY: SUDAN

"There is in all of Africa no more destructive bilateral relationship than that between China and Sudan . . . Beijing's relentless military, commercial, and diplomatic support of Khartoum's National Islamic Front regime has done much to ensure that Sudan remains controlled by a vicious cabal of unelected genocidaires,"[25] Dr. Eric Reeves, a professor at Smith College, told the Commission. The motivation behind this relationship is China's overwhelming desire to tap Sudan's oil reserves. Unlike many other nations, China is willing to work in such a risky and objectionable environment.

The China National Petroleum Company (CNPC) has been the primary actor in developing Sudanese oil production and its partnership with the government extends as far back as the mid-1990s. Because of the safety risks of operating in such an unstable area, China has hired militias to protect its oil operations and reserves and has cooperated with the Sudanese army to improve Sudan's infrastructure to extract and transport oil.[26] According to Dr. Reeves, highways and airstrips built jointly by the Chinese and Sudanese serve a dual purpose: they facilitate petroleum operations and also movement of Sudanese military forces around the country.[27]

CASE STUDY: SUDAN—Continued

In addition, China continues to sell arms and military equipment to Khartoum, including "helicopter gunships, tanks, armored personnel carriers, heavy artillery, mortars, combat aircraft, and light weapons."[28] U.N. investigators in the Darfur region have found that most of the small arms used in the conflict are of Chinese origin, stating "China has been, and continues to be, a major supplier of light weapons to the government of Sudan and many of the neighboring states."[29] Moreover, an Amnesty International report on Chinese arms sales noted that China had shipped more than 200 military trucks to Sudan, which could be used to transport the Sudanese army and its allied militia, the Janjaweed.[30] China has also assisted Sudan in developing its own arms manufacturing capacity, including the facilities to build Chinese-model tanks.[31]

Of greatest international consequence is the impact of China's non-interference policy on the genocide occurring in the Darfur region of Sudan. China has refused to allow progress on a U.N. Security Council resolution aimed at stopping the conflict in Darfur with the deployment of international peacekeeping forces or imposition of sanctions on the Khartoum government.[32] Dr. Reeves stated in testimony, "The National Islamic Front [National People's Congress], which controls all oil concession and operating contracts, counts on Chinese protection at the Security Council." China abstained from the latest resolution considered in August 2006 to create a U.N. peacekeeping force and has played no role in encouraging the Sudanese government to accept U.N. peacekeepers.[33] According to Dr. Reeves, China has a "clear interest in sustained conflict in Sudan, at least at levels that do not threaten operations,"[34] and at levels that prevent Western countries from entering Sudan's oil market.

Both Dr. Reeves and Deputy Assistant Secretary of State for East Asian and Pacific Affairs Thomas Christensen emphasized the importance of active U.S.-China cooperation on this issue and the necessity of public encouragement for China to act as a "responsible stakeholder" in this respect. Dr. Christensen said, "... China should participate with the United States in trying to create more transparent, accountable and ultimately stable governments in the areas were it gets its resources, both oil and otherwise."[35] Essentially, the cessation of genocide in the Darfur region should be an objective in creating a responsible relationship between China and Sudan rather than focusing on maintaining energy access.

Latin America

In her testimony to the Commission, Dr. Cynthia Watson, professor at the National Defense University, characterized China's behavior in Latin America as that of a state that perceives itself as an emerging power and "seeks to portray itself as a benevolent, welcome 'newcomer.'"[36] China's strategy is "calibrated and measured" to engage the region in ways and in places where the United

States is not involved,[37] and its activities are intended to raise China's visibility in the region.[38] Dr. William Ratliff, a Research Fellow at the Hoover Institution, explained in his testimony that many Latin American leaders have welcomed China's involvement in the region primarily because they believe the United States has not followed through on its promises for expanded relations and investment. He noted that President Hu Jintao of China spent more time in Latin America in November 2004 than President Bush has spent during his entire presidency.[39]

Although China's trade with Latin America is comparatively smaller than its trade with other regions, China's imports from Latin America have increased by 600 percent in the past five years.[40] China focuses on accessing resources, including iron, soybeans, copper, and oil.[41] Moreover, China's trade in Latin America appears designed to secure the entire supply chain in various key industrial sectors such as mining, a strategy termed vertical integration.[42]

Among China's relationships with nations in the region, its relationship with Brazil arguably is the most important. Brazil's exports of non-genetically modified soybeans meet a major need in China. Supplying another and quite different facet of the relationship, China's and Brazil's space programs are working cooperatively and sharing information.[43] China also is developing a relationship with Venezuela because it wishes to tap that nation's oil resources. There is concern in some Latin America countries, however, that China is merely buying up resources and is not investing in the development of indigenous industries.[44]

In addition to trade, China has participated in military exchanges and high-level visits with several Latin American nations. Latin American military officers have traveled to China for education and training at the People's Liberation Army National Defense University.[45] Dr. Watson concludes, however, that these and other high-level exchanges "appear to have limited effect and are certainly not a guarantee of weapons transfers or intelligence cooperation."[46]

The diplomatic battle with Taiwan for formal recognition is an important feature of China's relations in Latin America, where Chinese officials continue to press countries to recognize China and to revoke their recognition of Taiwan.[47] Of the 24 nations that still recognize the Republic of China, 12 lie in Central and South America and the Caribbean. According to Dr. Watson, these states "... retain their ... recognition of Taiwan because Beijing has not yet offered them a better deal. While there are some trade reasons for Taiwan's ties with these states ... these ties are not likely to appear compelling to these states' governments over the long term if Beijing offers significant assistance and trade incentives."[48] For the most part, China's activities focused on recognition have been restrained, but it has taken limited steps to use trade and aid packages as incentives.[49]

Dr. Watson concluded that China's activities in Latin America do not currently pose a threat to U.S. strategic interests.[50] Yet its engagement with leaders such as President Hugo Chavez of Venezuela who openly denounces the American government has the potential to undermine U.S. interests in the region. In particular,

China's support of Venezuela, Cuba, and Bolivia undermines the progress of democratic reforms in Latin America and harms efforts designed to improve transparency in Latin American governments and businesses. Dr. Watson advised the Commission that the United States could achieve greater security by improving bilateral relations within the region.[51]

CASE STUDY: VENEZUELA

China's relationship with Venezuela serves as an opportunity for China both to access Venezuela's oil resources and to establish a presence in the Western Hemisphere—notably in a location of substantial interest to the United States. In turn, for Venezuela, as Dr. Ratliff told the Commission, "[President Hugo] Chavez sees China as a country that is both critical ... of the United States and a major market for Venezuelan oil, and that market seems an ideal way to both reduce or end Venezuela's dependence on the United States and at the same time ... to drive Washington crazy."[52]

Although Venezuela cannot supply the amounts of petroleum to China that China obtains from other countries, this relationship allows China to diversify its energy supply. In August 2006, President Chavez traveled to Beijing, where China agreed to embark upon oil exploration and production projects valued at $5 billion. In addition, President Chavez announced plans to multiply by more than a factor of six Venezuela's oil sales to China—from 155,000 barrels a day to 1 million barrels per day by 2012.[53] This increase has been accompanied by a decrease in sales to the United States. From January to June 2006, Venezuela's exports to the United States fell by 18 percent, and in July, Citgo Petroleum Corporation, a distribution and marketing subsidiary of Venezuela's state-owned oil company Petróleos de Venezuela S.A., announced that it would reduce its U.S. network of gas stations by 14 percent.[54]

China's inability to refine Venezuela's heavy oil and the costs of transporting this oil back to China create two economic obstacles. In response, China has pursued building a refinery as an alternative, but transportation costs are a significant impediment because Venezuela lacks a Pacific port and the Panama Canal cannot accommodate supertankers.[55] As a result, the time needed to ship the oil to China around either the Cape of Good Hope or Cape Horn is so great, and thus the cost becomes so high, that the exchange is unaffordable. Dr. Ratliff estimated in his testimony that transportation of Venezuelan oil to China could take up to five to ten times longer than it takes to ship the oil to the United States.[56] Moreover, in a time of crisis, China would have difficulties protecting the shipments.[57] Together these factors likely will prevent Venezuela from becoming a dominant supplier of oil to China.

Nonetheless, China has been investing in the relationship with Venezuela. It has supported Venezuela's military by selling mobile air defense systems to the armed forces. China also is

CASE STUDY: VENEZUELA—Continued

assisting with the design, production, and launching of Venezeula's VENESAT–1 telecommunications satellite; the China Great Wall Industry Corporation contracted to launch this satellite in 2008.[58] However, China has limited its interactions with Venezuela primarily to oil and related industries,[59] apparently as a hedge, because of the risks of Venezuelan political instability; its desire to avoid badly poisoning relations with the United States (with which China has far and away its most valuable Western Hemisphere relationship); and public image problems.[60]

While China's activities and presence in Venezuela do not threaten Latin America or U.S. security interests yet, Chinese support of President Chavez and his anti-American rhetoric do not promote positive reform in Venezuela or elsewhere in the hemisphere. As is the case with so many of China's international relationships, its interactions with Venezuela cannot be characterized as the actions expected of a "responsible stakeholder" in the global community.

Middle East

China aspires to expand diplomatic influence in the Middle East, broaden its trade relationships there (primarily increasing markets for its exports), and gain access to a secure supply of petroleum. Dr. John Calabrese, Scholar-In-Residence at the Middle East Institute, noted in his testimony before the Commission that China's Middle Eastern diplomacy, largely based on commercial diplomacy, increasingly is more professionalized and institutionalized.[61] Its relations are multifaceted and China employs a combination of high profile visits, long-term economic agreements, and cultural exchanges[62] to solidify its position in the region as a strong economic partner. A number of Middle Eastern countries including Saudi Arabia, Iran, and Oman reciprocate China's desire to establish long-term partnerships in order to leverage China's presence in the region against the United States.[63]

China's economic activities primarily focus on obtaining petroleum and opening the Middle Eastern market to exploration and production activities of Chinese oil companies.[64] Indeed, China's energy security is inextricably linked to the stability and prosperity of this region including the Persian Gulf. In 2005, approximately half its petroleum imports came from the Middle East.[65] It is projected that as much as 70 to 80 percent of China's future oil imports will have to come from the Middle East and North Africa.[66] China is well aware of this fact and is arranging its activities accordingly. As Dr. Calabrese told the Commission, "Chinese energy entities have shown a greater patience in overcoming the political and bureaucratic obstacles to doing business in the Middle East, as well as greater flexibility and higher tolerance for risk than many of their foreign competitors."[67] Saudi Arabia supplies China with the majority of its oil imports; Iran is China's second largest petroleum supplier.

Although petroleum considerations dominate China's relationships with the Middle East, those relationships do have other facets. Some analysts believe that China's approach is designed to prevent the spread of Islamic fundamentalism to China's predominantly Muslim Xinjiang province. The testimony of Dr. Ehsan Ahrari of the Strategic Paradigms Consultancy specifically mentioned that China's pursuit of a relationship with Iran intensified because of the willingness of both countries to ignore issues of domestic concern. For example, Iran did not interfere with the Uighur Muslim population in China, and China did not interfere with Iran's persecution of the communist-leaning Tudeh party in Iran.[68]

In 2005, Chinese trade with the Middle East totaled approximately $51.3 billion.[69] China is pursuing bilateral free trade agreements and sub-regional free trade agreements there, including an agreement with the Gulf Cooperation Council (GCC)[70] with which a third round of negotiations concluded in January 2006.[71] Some of this trade, as well as other Chinese commercial and aid activity, is conceived as an incentive to facilitate China's access to the petroleum it so greatly desires. For example, Sinopec, one of China's national oil companies, has pledged to finance the modernization of an Iranian cement factory, as well as invest in electricity and telecommunications infrastructure[72] Dr. Calabrese noted that this and other similar pledges to Iran by China have not yet resulted in actual investment in that nation.[73] Dr. Calabrese noted that China's Middle Eastern partners have expressed frustration because investment projects have not been implemented as promised and that these projects are largely capital-intensive.[74] Middle Eastern oil producing countries need to create jobs for a growing youth population, and China's investments do not alleviate this problem. As in Africa and Latin America, Chinese consumer products have flooded Middle Eastern markets, especially in Iran, and have crowded out local producers, thus compounding labor problems.[75]

China has a long history of selling arms, proliferating missiles, and providing militarily-useful technology to countries in the Middle East, including Saudi Arabia and Iran. Dr. Calabrese testified that not all these sales necessarily will destabilize the strategic balance in the region, but the transfer of dual-use items and technologies that enhance indigenous capabilities for missile proliferation could be more dangerous. He argued that "... the proliferation of missiles and missile-related technology—mainly to Iran—remains the most persistent and arguably the most dangerous aspect of Sino-Middle Eastern relations."[76]

China's active diplomatic efforts to secure Middle Eastern energy supplies increase competition for American energy interests, and also weaken the impact of U.S. sanctions on Iran. However, the effects of China's activities in the Middle East on international peace and security go well beyond these two considerations. A major current example is that China has not supported U.S.-led efforts to implement U.N. sanctions against Iran in response to Iran's refusal to halt its nuclear weapons program and allow International Atomic Energy Agency (IAEA) inspections.

In addition, China's arms sales may affect regional stability through secondary proliferation. In July 2006, Hezbollah militants

launched anti-ship cruise missiles from the coast of Lebanon toward an Israeli anti-aircraft warfare ship. Reports identified the missile design by its electronic signature as a Chinese-designed C-802 *"Silkworm"* missile;[77] an estimated 150 such missiles were sold by China to Iran in the late 1990s.[78] China has not been accused of directly transferring missiles to Hezbollah, but this example illustrates that missile proliferation has consequences, especially when proliferating to countries that disregard international nonproliferation norms or that support terrorist organizations.

Central Asia

Internal and regional stability, access to petroleum, and competition with the United States for influence in the region constitute the focus of China's diplomacy in Central Asia, and China approaches each issue with different strategic goals. Dr. Martha Brill Olcott, Senior Associate at the Carnegie Endowment for International Peace, stated in testimony before the Commission, "The Chinese leadership and its quasi-state business community have been very pragmatic in establishing and strengthening their relationship within Central Asia, making careful calculation of China's short-, medium-, and long-term interests in the region."[79]

Internal security in part motivates China's relationships with its Central Asian neighbors. In Xinjiang province, a very small element of China's Muslim Uighur population has for some time expressed separatist sentiments. Observers generally do not believe these indicate an embrace of radical Islam but rather that they stem from a desire for sovereignty, land rights, and fair treatment by the Chinese government.[80] Given the similar ethnic and religious backgrounds of the populations of bordering Central Asian states, China fears the possibility that some of these states might decide to support Uighur aspirations for independence from China or greater autonomy. A major reason China engages the countries on its Western border—Kazakhstan, Kyrgyzstan, and Tajikistan—is to reduce the likelihood these countries will support the Uighur separatist movement[81] and to obtain cooperation in ensuring border integrity and security.

China was instrumental in establishing the Shanghai Cooperation Organization (SCO), a regional agreement between China, Russia, Kazakhstan, Uzbekistan, Tajikistan, and Kyrgyzstan, as a vehicle for engaging Central Asia on issues of regional security and political and economic development. Four observer nations—Mongolia, India, Pakistan, and Iran—also attended its most recent meeting in June 2006. The SCO identifies "terrorism, separatism, and extremism" as principal security concerns. It also encourages cooperation on issues of border control and narcotics.[82] Despite its appearance as a multilateral organization, Dr. Dru Gladney, professor at the University of Hawaii, argued to the Commission that the SCO "... has no other role than bringing the member countries together to discuss issues that are only and ever addressed bilaterally and resolved bilaterally."[83] For example, although it was hailed as an example of SCO cooperation, the August 2005 Peace Mission military exercise involved only Russia and China.[84] The chief beneficiary of the SCO is China,[85] which uses it to promote its reputation as a leader in regional security affairs and a reliable

international partner. China also has used the SCO as an instrument for increasing its access to petroleum resources in the region.

China, indeed, has focused considerable attention on acquiring petroleum from Central Asia. In October 2005, one of China's national oil companies, China National Petroleum Corporation, purchased PetroKazakhstan, a Canadian-owned oil company in Kazakhstan, for approximately $4.5 billion. In December 2005, China and Kazakhstan opened a 998-kilometer-long pipeline, expected to deliver 200,000 barrels per day to China by 2007.[86] China is also pursuing the development of a gas pipeline from Uzbekistan to connect with the Kazakhstan-China pipeline, and another pipeline linking it with Turkmenistan.[87]

For the United States, China's involvement in Central Asia raises several questions. China and the United States have enunciated similar goals of opposing radical Islamic terrorism, and the two nations reportedly have cooperated on some anti-terror initiatives. Dr. Gladney, however, expressed doubts regarding China's sincerity in these efforts, primarily because the United States has not received cooperation from China in combating terrorism in Southeast Asia or in the Middle East, but also because he views Chinese anti-terror efforts as an excuse to expand control over Xinjiang Muslims in a political move serving the interests of China's government and the Chinese Communist Party that controls it.[88]

Experts differ regarding China's perception and acceptance of the United States in Central Asia. Dr. Cohen argues that China began to feel strategically threatened by the United States' increased presence in that region following the September 11 attacks and subsequent invasion of Afghanistan, evidenced by China's support of public statements opposing U.S. democracy initiatives[89] and U.S. bases in Uzbekistan and Kyrgyzstan.[90] Chinese pressure coincided with other factors in Uzbekistan, and the U.S. base was closed.[91] Also, in Kyrgyzstan, the rent for U.S. military bases was raised significantly.[92] China is trying to use the SCO to reduce U.S. influence in the region and even contacted Kyrgyz officials to initiate discussions of placing Chinese military bases in Kyrgyzstan.[93] Conversely, Dr. Olcott contends that China has no immediate interest in pushing the United States out of Central Asia because China views the U.S. presence as a stabilizer in the region; however, she believes China would not endorse an extended U.S. presence in the region over the long term. With regard to China's statements against U.S. bases, she pointed out that these statements did not suggest a deadline for the departure of U.S. troops and that the statements originated from Uzbekistan, although both China and Russia supported them.[94]

In Central Asia, China is encouraging regional economic integration, political dialogue, security cooperation, and development of Central Asia's petroleum market as a driver of economic growth. However, China has little interest in some of America's goals, such as promoting human rights, freedom of the press, and development of post-Soviet democratic political systems. Dr. Cohen told the Commission this sends the wrong message to Central Asian leaders.[95] He also indicated that China's actions may be an effort to resurrect or create a modern form of the tributary system that ex-

isted during the era of Imperial China.[96] China's relationships with Central Asian states do not support governmental and economic reforms toward democracy, human rights, and free market economies.

Northeast and Southeast Asia

China is expanding trade with the nations of Northeast and Southeast Asia. As is the case with its relationships with Central Asia, one of its primary objectives in its relationships with Northeast and Southeast Asian states is to ensure stability and security, often at the expense of values the United States thinks are important, such as democracy and peace. China desires not to dissipate its attention and resources in contending with conflict or disorder at or near its borders. Rear Admiral Michael McDevitt (USN-Ret.), Director of the Center for Strategic Studies at the Center for Naval Analyses, told the Commission, "There is no question that China is the dominant economic and military power on the continent of Asia. Despite being dominant in terms of power, Beijing's relations with its neighbors are dictated by its grand strategic objective of preserving peace and stability in its "near abroad" so that economic development can proceed."[97] Additional objectives include gaining economic advantage, reassuring Asian countries of China's peaceful rise, isolating Taiwan, and increasing international influence.[98]

RADM McDevitt characterized China's relations with Northeast Asian countries as promising, with the exception of Japan. China's diplomacy toward Japan has been marked by "latent tensions" concerning unresolved issues of history. More recently, China's government focused on former Japanese Prime Minister Junichiro Koizumi's visits to the Yasukuni shrine to highlight those historical issues.[99] In addition, both countries currently compete for energy supplies in the East China Sea and, fueled by growing nationalism, have not resolved territorial disputes.[100] With new Prime Minister Shinzo Abe's visit to China in October 2006, the two nations reportedly are trying to ease existing tensions and reestablish bilateral dialogue.[101]

China's bilateral relations with the Republic of Korea, or South Korea, are generally positive. China and South Korea share interests in stability on the Korean peninsula.[102] China's soft power and cultural attraction have increased; Chinese has replaced English as the most popular language studied by liberal arts majors in South Korea.[103]

Despite China's stated peaceful objectives, Asian nations have expressed concerns about China's intentions in the region.[104] A number of Asian countries are hedging against the dangers they perceive in a more powerful China by strengthening bilateral relationships, including with the United States, and multilateral relationships to "preserve their independence and freedom of action."[105] Japan, South Korea, Thailand, and Taiwan have maintained close relationships with the United States and each has involved itself in a number of economic, security-related, and political multilateral organizations.

The nations of Southeast Asia have achieved a notable degree of cooperation through the Association of Southeast Asian Nations (ASEAN). In his testimony to the Commission, Dr. Karl D. Jack-

son, professor at the School for Advanced International Studies at Johns Hopkins University, identified three specific emphases of the ASEAN organization related to the member nations' desire to hedge against China's rise: expanding its membership to include a total of ten nations; signing an ASEAN-China Treaty of Amity and Concord; and insisting that the United States remain engaged in the region.[106]

China's commercial activities are the most evident conduit for China's influence in Asia, and they have benefited China's reputation.[107] In Southeast Asia, however, the United States remains the most important economic partner, primarily for two reasons. Southeast Asian economies have been affected by China's currency peg, making Southeast Asian exports less competitive with Chinese exports and shifting foreign direct investment toward China.[108] In addition, Chinese investment in the region remains small, so manufacturers are receiving little help in contending with the competition of low-priced goods from China's expanding processing industries.[109]

Dr. Robert Sutter, professor at the Walsh School for Foreign Service at Georgetown University, argues that China's growth and diplomatic expansion reinforce the desire for U.S. leadership in the region as a "security guarantor and vital economic partner."[110] His view was echoed by Rear Admiral McDevitt: Asian governments seek interaction with the United States to increase their confidence and comfort in engaging with China.[111] Without the U.S. presence, Asian countries would be more concerned about China.

The consequences of more aggressive attitudes toward China by other Asian nations could fuel conflict, especially in the case of Japan. RADM McDevitt argued that the United States should promote trilateral cooperation among the United States, Japan, and China and to encourage both Japan and China to take on the responsibilities and role of a "responsible stakeholder" regionally and globally. Increased stability in the Japan-China relationship could lower regional concerns about China's military modernization, and Dr. Sutter asserts that U.S. involvement toward this end could provide both countries with a way to adjust their antagonistic policies and open the door to a more positive diplomacy.[112]

CASE STUDY: BURMA

China's relations with Burma bolster the capability of the military junta to rule the country by keeping the Burmese economy afloat in the face of international sanctions. China is the largest investor in Burma, and provides low-interest loans to the Burmese government—most recently a June 2006 pledge of a $200 million loan to five unspecified government ministries. China also supplies 90 percent of Burma's military's armaments and has granted $1.6 billion in military assistance and modernization funding.[113] In return, China will receive access to Burma's natural resources—including timber, oil, and natural gas. Moreover, this relationship with Burma potentially could enhance China's power projection capability by extending its presence into the Bay of Bengal and the Andaman Sea, two areas vital to the transportation of China's oil imports from the Persian Gulf.[114]

Although they will not be able to compete with the volume of natural gas China imports from Iran, Burma's natural gas reserves are of importance to China's energy security because this natural gas can be transported overland by a proposed pipeline directly linking the two countries. This has prompted China to invest heavily in Burma's natural gas sector; in November 2005, PetroChina signed a 30-year contract with Burma for 6.5 trillion cubic feet of natural gas, and in February 2006 China loaned Burma $85 million to purchase two new oil rigs.[115] Jared Genser, a fellow for the National Endowment for Democracy and lead author of the Havel-Tutu Report calling for U.N. action in Burma, stated in testimony that he feared PetroChina's activities would benefit from Burmese forced labor and would be indirectly responsible for human rights violations.[116]

Despite the positive economic relations between China and Burma, this relationship has had negative consequences both domestically and internationally for China. Burma's trade in opium, heroin, and methamphetamine is responsible for increased drug addiction in southern China, and a significant number of HIV/AIDS cases can be traced to China's provinces that border Burma.[117] These negative impacts have induced public statements from the Chinese government against Burma's illegal drug trade and its inability or unwillingness to control the situation. Internationally, China's support for Burma has drawn criticism. In December 2005 and May 2006, the U.N. Security Council held private briefings on the situation in Burma, to which China agreed in order to prevent a public discussion from reaching the formal agenda.[118] Most recently, in September 2006 the U.N. Security Council placed Burma on its formal agenda, which will allow it to examine the situation there. China opposed this decision.[119]

Hong Kong and Taiwan

Both Hong Kong and Taiwan, as ingredients in the U.S.-China relationship, are of great importance. Each in its own way acts as a bellwether for determining whether China's rise will collide with fundamental U.S. interests or whether it will avoid conflict. Hong Kong and Taiwan, also, offer arguably the easiest and most convenient opportunities for China to demonstrate that it is ready, willing, and able to accept the role of responsible stakeholder in the community of nations and use its growing power, economic clout, and influence for global benefit in a "win-win" manner, rather than in a way that benefits China at the expense of other nations.

Hong Kong

Hong Kong's "one country—two systems" structure was originally codified in the agreement between China and the United Kingdom that resulted in the return of the former British territory to Chinese control in 1997. The conditions of the return purported to guarantee a continuation of the greater degree of autonomy, democracy, human rights, and a free market economic system that existed in Hong Kong than exist in China—and to offer the promise of further democratization. It is of great significance to the United States whether China honors its commitments.

Because of the importance of the status of Hong Kong, each time in the past several years that a delegation of Commissioners has visited China, a stop in Hong Kong has been included to enable Commissioners to talk with Hong Kong citizens and officials, as well as with American diplomats and businessmen, to assess whether the commitments are being honored, and whether Hong Kong is progressing, retreating, or just maintaining the status quo in these important respects.

Based on the observations of the Commissioners who visited Hong Kong in June 2006, it appears that many of the political and economic guarantees assured in the Sino-British agreement of 1997 have been retained, such as preservation of the legal system and economic autonomy. However, there are areas of concern.

Hong Kong's citizens are guaranteed a free press—which performs a crucial function in any democratic state as a "watchdog" of the political process and government on behalf of the people. Unfortunately, whether or not the effort is orchestrated by Beijing, the independent and outspoken news media in Hong Kong have been disappearing. The great majority of news organizations now belong to larger business organizations that seek a cooperative relationship with the Chinese government in order to enable and facilitate their commercial activities. They seek to ensure their media subsidiaries do not antagonize the government. There is widespread agreement that only one widely available newspaper remains independent and vocal in its assessment of the Hong Kong government's and Chinese government's actions and intentions, and there are fears that its owner may be unable to resist delivering it to the same fate as all the others. Moreover, China's arrest of journalists has prompted fears even among employees of foreign newspapers, especially as China's treatment of the arrested journalists and denial of basic legal rights during trial indicate political motivations for the government's actions.[120] If this vital means of criticism and

introspection is lost to Hong Kong, there are questions about whether or not Hong Kong's democratic features can be preserved and expanded.

The Hong Kong Basic Law suggests that Hong Kong will move toward further democratization of its electoral process—in the form of "universal suffrage"—for its legislative body, the Legislative Council, and its Chief Executive.[121] The current process has a strong "constituency-based" element. Many Hong Kong citizens—and the United States and other democratic nations—had hoped for early progress in this direction. However, late in 2005 Hong Kong Chief Executive Donald Tsang, recently appointed by the Chinese government, announced that movement toward universal suffrage would not occur in the immediate future.[122] In his October 2006 annual policy address, he indicated that progress on this issue again would be delayed.[123]

The Commission reiterates its belief that the Hong Kong system is a crucial one, and that it is very important for the United States and other democracies to maintain a close watch on developments there, and to sound the alarm should there be any significant erosion of those democratic, human rights, and economic differences that set it apart from China. To this end, the Commission expects to continue to visit Hong Kong as it visits mainland China to update its knowledge and understanding of occurrences there so that it can convey those to the Congress for its evaluation and action.

Taiwan

U.S. support for Taiwan has grown as the island has democratized, and as it has developed a free market economy that offers an important economic partnership to the United States and other trading nations. This support is underpinned by the Taiwan Relations Act and by other statutes and Executive Orders. Despite the fact that the United States switched its formal recognition from Taiwan to China during the late 1970s, the United States maintains close ties to Taiwan. It has made important defensive weapons systems available for Taiwan to purchase in order to deter Chinese aggression. And it has encouraged development of bilateral trade and commercial relationships. The Commission supports Taiwan's democratic system; it believes it is in the U.S. interest for Taiwan's democracy and free market system to flourish and for both sides of the Taiwan Strait to work out their differences in a peaceful manner free of threats and coercion.

A Commission delegation visited Taipei in the summer of 2006 for discussions with Taiwan government officials, policy analysts, academics, and business people, and with American diplomats and business people concerning Taiwan's relationship with the United States, Taiwan's relationship with China, and Taiwan's internal political situation.

Among the topics the delegation discussed was the increasingly complicated relationship that has developed between Taiwan and China, largely as a result of the heavy investments Taiwan businesses have made in China's economy, and establishment by many of those businesses of manufacturing plants and other activities and facilities there. Taiwan is the largest source of foreign investment in China today. Recognizing this situation poses some signifi-

cant risks to Taiwan, government officials told the Commission delegation that mechanisms are in place to limit investments in the mainland, but they acknowledge that many Taiwan businesses evade those restrictions by establishing companies in economically free-wheeling locations such as the Cayman Islands and Bermuda and using those companies as conduits for their investments.

Complicating this situation are China's persistent efforts to economically, militarily, and diplomatically isolate Taiwan and prevent it from integrating in the regional economy and from playing a role in the international community.[124] A number of those to whom the Commission delegation spoke, both in and outside government, during its visit to Taipei emphasized this concern. In August, Dr. Sutter testified to the Commission that Chinese officials have been effective in these efforts to isolate Taiwan, especially by preventing Taiwan's entrance into regional economic organizations.[125] Moreover, he stated, "Over time, Chinese pressure, backed by China's increasing importance to Southeast Asian countries, has made visits of Taiwan officials [to those Southeast Asian nations] at the ministerial level difficult while visits of top-level Taiwan officials are very rare."[126]

Taiwan is particularly concerned about U.S. free-trade agreements with other Asian nations, notably including South Korea, fearing that these may result, even if inadvertently, in a deflection of some trade activity from Taiwan to the nations with which the special arrangements exist. Government officials, policy analysts, and business people all expressed a strong hope to the Commission's delegation that the United States would agree to vigorous negotiations intended to produce a Taiwan-United States free-trade agreement at the earliest possible date, and assured the delegation that Taiwan is prepared to make agricultural and other trade concessions that will be necessary in order to produce an agreement. Taiwan leaders believe that achieving a free-trade agreement with the United States is an economic necessity, but that it is, in fact, even more than that: it is a strategic necessity without which Taiwan fears its ability to survive and prosper in the Western Pacific/East Asian region, and the world at large, will begin to erode.

Another consistent topic of discussion with the Commission delegation to Taiwan was the concerted efforts by the Chinese to "divide and conquer" the Taiwan political system by pitting one Taiwan political party against another. Political struggles in Taiwan over the issue of independence and the relationship with the mainland, combined with rising domestic political tensions and allegations of corruption, have distracted Taiwan's democracy from further development and from making policy choices important for its own security—including, for example, the long-stalled purchase of items in the U.S.-approved defensive arms package.

[NOTE: Issues related to the defense of Taiwan and the military balance between China and Taiwan are addressed in Section 3—"The Military Balance Across the Taiwan Strait"—of Chapter 3.]

SECTION 2: CHINA'S PROLIFERATION AND INVOLVEMENT IN NORTH KOREA'S AND IRAN'S NUCLEARIZATION ACTIVITIES

The Commission shall investigate and report on "PROLIFERATION—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."

Key Findings

- Chinese companies and government organizations continue to proliferate weapons, weapons components, and weapons technology. Some of these transfers violate China's international nonproliferation agreements, harm regional security in East Asia and the Middle East, and are a measure of China's failure to meet the threshold test of international responsibility in the area of nonproliferation. Given strong U.S. interests in both regions, Chinese proliferation threatens U.S. security and potentially could place at risk U.S. troops operating in those regions.
- China possesses the unique ability to influence North Korea's actions, partly because of the great extent to which North Korea depends on it for consistent supplies of food and fuel. Notwithstanding its commendable efforts to persuade North Korea to remain involved in the Six-Party Talks seeking to obtain North Korean agreement to end its nuclear program, China has refused to use its leverage effectively to pressure North Korea to cease its nuclear and missile development activities and, in particular, not to conduct the nuclear test it conducted in October.
- Chinese companies and government organizations continue to assist Iran's missile development program, and have aided Iran's nuclear program. China also has refused to cooperate in the efforts by a number of nations to persuade or force Iran to halt its military nuclear program and instead has offered political and moral support for Iran and obstructionism in the United Nations.
- China's continued frustration of nonproliferation efforts may precipitate additional nuclear proliferation, including nuclear weapons development and transfer of nuclear weapons to non-nuclear nations and terrorists, proliferation of other weapons of mass destruction, and conventional arms races.

China's Proliferation Record

In testimony before the Commission, Assistant Secretary of State for Compliance, Verification, and Implementation Paula DeSutter acknowledged that the U.S. government has repeatedly engaged the Chinese government at its highest levels "to reinforce our message that the proliferation of WMD [weapons of mass destruction] and missile technology is a threat to our mutual security." [127] Despite this effort and additional dialogues on missile modernization and nuclear policy,[128] the United States "remain[s] disappointed in the continuing proliferant behavior of certain Chinese entities, and . . .

about the Chinese government's commitment towards its nonproliferation obligations." [129]

The following chart lists current multilateral nonproliferation treaties and regimes and describes China's status and level of participation with respect to them:

International Nonproliferation Agreements and China's Participation

Nonproliferation Regime	Description	China's Response
Biological Weapons Convention (BWC)	Outlaws the production, development, storage, and use of biological weapons	China acceded to the BWC in 1984 [130]
Chemical Weapons Convention (CWC)	Outlaws the production, storage, and use of chemical weapons	China signed the CWC in 1993. In 1997, China ratified the convention [131]
Nuclear Nonproliferation Treaty (NPT)	The five original nuclear states (France, China, USSR (now Russia), United Kingdom, and United States) agree not to use nuclear weapons against non-nuclear states except in response to a nuclear attack, and to prevent the transfer of nuclear weapons to non-nuclear states; and affirm the right of states that do not possess nuclear weapons to use peaceful nuclear technology	China acceded to the NPT in March 1992 [132]
Zangger Committee	Maintains a list of equipment that may be exported only to facilities that have nuclear safeguards in place, and fosters coordination among states for controlling the export of nuclear materials	China joined the Zangger Committee in 1997 [133]
Nuclear Suppliers Group (NSG)	Controls the export of materials that may be used for nuclear weapons development	China joined in May 2004 [134]
Comprehensive Test Ban Treaty (CTBT)	Each party agrees to prohibit "... any nuclear weapon test explosion or any other nuclear explosion, and to prohibit and prevent any such nuclear explosion at any place under its jurisdiction or control," and to "... refrain from causing, encouraging, or in any way participating in the carrying out of any nuclear weapon test explosion or any other nuclear explosion." [135]	China signed in September 1996, but has not ratified the treaty. (The United States is a signatory, but also has not ratified the treaty)

International Nonproliferation Agreements and China's Participation—Continued

Nonproliferation Regime	Description	China's Response
Missile Technology Control Regime (MCTR)	A "set of voluntary guidelines that seeks to control the transfer of ballistic and cruise missiles that are inherently capable of delivering at least a 500 kg (1,100 lb) payload a distance of at least 300 km (186 mi), called "Category I" or "MTCR-class" missiles"[136]	China is not a member. However, it has made qualified commitments to "abide by various missile nonproliferation commitments."[137] Under these commitments, China exempted certain missiles and grandfathered early transfers. Its most recent commitment in 2000 stated that it would not assist "in any way, any country in the development of ballistic missiles that can be used to deliver nuclear weapons (i.e. missiles capable of delivering a payload of at least 500 kilograms to a distance of at least 300 kilometers)."[138] China has not committed to restrictions pertaining to other missiles.[139]
Proliferation Security Initiative (PSI)	An effort led by President Bush to prohibit and prevent the transfer of banned weapons and technology applicable to nuclear, chemical, and biological weapons	China has not joined, voicing concerns about the legality of the PSI
International Code of Conduct Against Ballistic Missile Proliferation	Intended to curb the proliferation of ballistic missiles and to support the implementation of the MTCR	China has not joined

China has not even fulfilled the nonproliferation obligations it has agreed to accept.[140] Evidence of recurring transfers of militarily-sensitive materials, products, and technologies by Chinese companies and government organizations suggests that some of these organizations are serial proliferators and have no fear of government controls or punishments.[141] As Assistant Secretary of Defense for International Security Affairs Peter Rodman noted in his September testimony, these organizations, including state-owned enterprises (SOEs), continue to supply items and technology useful for developing WMD and delivery systems.[142] Some of these missile technologies can be used in a variety of missile programs.[143] Additionally, the United States remains concerned that China is currently conducting biological and chemical weapons research in violation of its obligations under the Biological Weapons Convention and the Chemical Weapons Convention;[144] that it continues to expand its missile modernization program;[145] and that proliferating companies and government organizations in China could transfer the products of these efforts to North Korea, Iran, and other nations or to terrorist organizations engaged in various proliferation activities.

The United States has attempted to persuade China to step up its enforcement of its domestic nonproliferation laws and regulations, and to comply with its international nonproliferation commit-

ments.[146] Also, the United States has worked to deter Chinese companies and government organizations from proliferating by altering the incentive structure,[147] increasing the political and economic costs of proliferation. Sanctions are the primary vehicle for this effort. Below is a chart listing sanctions imposed on Chinese companies and organizations since the issuance of this Commission's 2005 Annual Report:

List of Sanctions Imposed on Chinese Entities Since November 2005

Date	Entity/Person	Controlling Statute
December 2005	• China Aero-Technology Import/Export Corp. (CATIC) • North China Industries Corporation (NORINCO) • LIMMT Metallurgy and Minerals Company Ltd. • Ouinion (Asia) International Economic and Technical Cooperation Ltd. • Zibo Chemet Equipment Company	Iran Nonproliferation Act: regarding missile and chemical weapons proliferation
June 2006	• Beijing Alite Technologies Company Ltd. (ALCO) • LIMMT Economic and Trade Company Ltd. • China Great Wall Industry Corporation (CGWIC) • China Precision Machinery Import-Export Corp. (CPMIEC) • G.W. Aerospace (a U.S. office of CGWIC)	Executive Order 13382: regarding missile proliferation
August 2006	• Great Wall Airlines Company Ltd.	Executive Order 13382: regarding missile proliferation and dual-use components.

In June 2006, as the chart indicates, the United States imposed sanctions on four Chinese companies plus the U.S. subsidiary of one of them, under Executive Order 13382 [148] because the U.S. government determined that they provided, or attempted to provide, support for Iran's Aerospace Industries Organization (AIO), a key actor in developing Iran's missile program.[149] All of the firms subjected to sanctions in this round had been sanctioned previously under other U.S. laws.[150] Assistant Secretary Rodman's testimony indicated that one of these companies, China Precision Machinery Import-Export Corporation (CPMIEC), had transferred items controlled under the Missile Technology Control Regime (MTCR) and thus in violation of China's obligations and commitments to prevent missile transfers and technology.[151] In August 2006, the Great Wall Airlines Company was designated as a proliferator; its parent company, China Great Wall Industry Corporation (CGWIC), was sanctioned in June. Great Wall Airlines had to suspend its operations after the designation because the Boeing Company, an American corporation, thereafter was prohibited from supplying to the firm technical assistance, parts, and aeronautical charts for pilots.[152]

Although China has domestic legal mechanisms in place to support nonproliferation efforts, particularly an export control system, to date Chinese action against proliferating companies and government organizations has been "uneven" and "irregular." [153] Thus, the question is whether China's failure to cease proliferation results from the government's inability to control actors within the country or from China's unwillingness to enforce its own laws. It appears that China's proliferation activities are facilitated by a "general willingness to transfer a wide variety of technologies to customers around the world, including to states of concern, not only Iran and North Korea, but [also] Sudan, Burma, Zimbabwe, Cuba, and Venezuela." [154] These transfers may alter the balance of power in the regions in which these countries are located, or may be retransferred to non-state actors including terrorists. Assistant Secretary Rodman stated that Chinese leaders now acknowledge the danger of secondary proliferation and the potential for nuclear terrorism,[155] but China's weapons transfers often occur in concert with Chinese attempts to improve economic and trade relations with certain countries, especially those with significant natural resources. In this respect, China permits its economic objectives and their political implications to trump its nonproliferation commitments.

China's transfers of militarily-sensitive items, whether conventional arms or related to weapons of mass destruction, may spark regional instability and also harm U.S.-China bilateral relations [156] as the United States responds to proliferation threats around the globe. The propensity of China's proliferation partners to retransfer items received from China could produce grave repercussions for China—for example, if it were established that a North Korean nuclear bomb traveled through China (as a result of lax customs controls and poor inspection policies) to a rogue nation or terrorist group [157] that detonated it on U.S. territory or that of a U.S. ally, or used the bomb to help it acquire its own nuclear capability.

Also among the consequences of North Korea's nuclear capability and the possibility Iran also will acquire such capability is the possibility other nations in Asia and the Middle East will initiate efforts to obtain nuclear capability.

This section further examines China's proliferation record in the context of its proliferation to North Korea and Iran. A more detailed understanding of the political and economic motivations behind the proliferation of weapons and technology can be gained from these two cases, as well as a deeper appreciation for the secondary consequences of such actions. Moreover, these cases will examine the extent to which China can be considered a responsible stakeholder with respect to nonproliferation.

China's Proliferation to North Korea and Its Role in North Korea's Nuclear Weapons Development

China has a history of assisting the North Korean regime in the development of weapons programs. As early as 1998, the United States publicly confirmed reports of China's assistance to North Korea in developing missile capabilities and in supporting the transfer of missile components.[158] As recently as 2004, the Director of Central Intelligence reported that North Korea acquired missile-related assistance from China.[159]

China has contributed at least indirectly to North Korea's nuclear weapons program. China was the "principal supplier" to Pakistan's nuclear weapons program, and several links have been identified between North Korea and Pakistan and its nuclear laboratories headed by A.Q. Khan.[160] *The Washington Post* reported in February 2004 that A.Q. Khan sold a nuclear bomb design to Libya that he obtained from China, and this raises concerns that Khan may have sold other Chinese-designed nuclear weapons technology to North Korea.[161] In 2003, the Central Intelligence Agency estimated "that North Korea has produced one or two simple fission-type nuclear weapons and has validated the designs without conducting yield-producing nuclear tests."[162] In October 2006, *The Washington Post* cited U.S. intelligence officials who estimated that North Korea might have as many as six nuclear devices, or more.[163]

Since 1994, China has facilitated negotiations involving North Korea, the United States, and other nations concerning North Korea's nuclear program.[164] Princeton University Professor Aaron Friedberg testified that in 2002 China engaged more actively in this process due to the concern that the United States might use force against North Korea.[165] Between August 2003 and September 2005, China hosted four rounds of the Six-Party Talks that have included China, North Korea, South Korea, Japan, Russia, and the United States. During the last round, the parties agreed to a Joint Statement of Principles in which "[t]he [Democratic People's Republic of Korea—or North Korea] committed to abandoning all nuclear weapons and existing nuclear programs and returning, at an early date, to the Treaty on the Non-Proliferation of Nuclear Weapons and International Atomic Energy Agency (IAEA) safeguards."[166] Although the statement did not discuss a concrete timeline for dismantling North Korea's nuclear program and any weapons it had produced, it was widely recognized as a positive step forward in the negotiations, and China was credited with brokering the agreement.[167]

Unfortunately, since that last round in September 2005, no progress has occurred with the Six-Party process. The Joint Statement had announced another round of talks to occur in November 2005, but North Korea boycotted the meeting. The reason North Korea gave was that it was protesting the United States freezing North Korean accounts worth $24 million at the Banco Delta Asia in Macau.[168] The United States froze those accounts after obtaining evidence the bank was involved in laundering money from North Korean illicit trading activities and placing into circulation counterfeit U.S. currency made by North Korea.[169] North Korea refused to resume talks until the United States terminated its action against Banco Delta Asia and the stalemate has continued to the present.

In July 2006, North Korea test-fired seven missiles, including the long-range Taepodong-2 missile with a range estimated to reach the continental United States. After these tests, China and Russia urged the United States and Japan to respond cautiously and, in particular, not to rush to seek sanctions. North Korea threatened "all-out countermeasures" if the U.N. Security Council imposed sanctions.[170] On July 15, 2006, the Security Council passed Resolution 1695 condemning the missile launches; demanding that North Korea suspend all activities related to its ballistic missile program;

and urging North Korea to return to the Six-Party Talks without preconditions.[171] The resolution imposed what are considered targeted, punitive sanctions against North Korea, requiring U.N. member states, consistent with their own laws, "to exercise vigilance and prevent missile and missile-related items, materials, goods and technology being transferred to DPRK's missile or WMD programmes," and to prevent "the procurement of missiles or missile-related items, materials, goods and technology from the DPRK, and the transfer of any financial resources in relation to DPRK's missile or WMD programmes."[172] China voted for the resolution, but only after language imposing the sanctions under the authority of the U.N. Charter[173]—which can be used to require U.N. member nations to institute sanctions and take other steps without regard to their national laws—was deleted from the text.[174]

In early October 2006, Pyongyang announced that it had conducted a nuclear test, which was later confirmed by the United States. China has strongly criticized North Korea for conducting the test, and announced that it will support "carefully targeted" sanctions in the United Nations. However, as the Security Council crafted a resolution, China objected to sanction measures proposed by the United States and Japan.[175] After a series of negotiations, Beijing agreed to Resolution 1718, which then was adopted by the Security Council. Among other things, the resolution, under Chapter VII authority (removing discretion for member nations under their own laws), requires U.N. member nations to do the following:

> *"prevent the direct or indirect supply, sale or transfer to the DPRK, through their territories or by their nationals, or using their flag vessels or aircraft, and whether or not originating in their territories, of:*
>
> *(i) Any battle tanks, armoured combat vehicles, large caliber artillery systems, combat aircraft, attack helicopters, warships, missiles or missile systems as defined for the purpose of the United Nations Register on Conventional Arms, or related material including spare parts, or items as determined by the Security Council or the Committee established by paragraph 12 below (the Committee);*
>
> *(ii) All items, materials, equipment, goods and technology as set out in the lists in documents S/2006/814 and S/2006/815 . . . as well as other items, materials, equipment, goods and technology, determined by the Security Council or the Committee, which could contribute to DPRK's nuclear-related, ballistic missile-related or other weapons of mass destruction-related programmes;*
>
> *(iii) Luxury goods."*
>
> *In addition, all Member States shall "freeze immediately the funds, other financial assets and economic resources which are on their territories at the date of the adoption of this resolution or at any time thereafter, that are owned or controlled, directly or indirectly, by the persons or entities designated by the Committee or by the Security Council as being engaged in or providing support for, including through other illicit means, DPRK's nuclear-related, other*

weapons of mass destruction-related and ballistic missile-related programs—and ensure that any funds, financial assets or economic resources are prevented from being made available by their nationals or by any persons or entities within their territories . . .'; and to prevent "illicit trafficking in nuclear, chemical, or biological weapons, their means of delivery and related materials" by taking "cooperative action including through inspection of cargo to and from the DPRK as necessary."[176]

Despite China's vote for the resolution (that had been somewhat diluted at its insistence), the United States has concerns about China's willingness to fully support it and implement all its provisions, particularly the provision for inspection of cargo moving to and from North Korea. China has indicated it will not be involved in interdicting North Korean ships on the open sea, but did agree to inspect cargo passing through its territory.[177] The U.S. Department of State has acknowledged that China has begun inspecting trucks traveling across China's border to North Korea.[178]

In his testimony to the Commission, Deputy Assistant Secretary of State for East Asian and Pacific Affairs Thomas Christensen stated that China's cooperation with the United States, including China's hosting of the Six-Party Talks, its brokering of the September 2005 Joint Statements, and its vote in support of Resolution 1695, are positive examples of China becoming a responsible stakeholder.[179] These actions produced a "qualitative and quantitative improvement" in U.S.-China dialogue and collaboration related to North Korea.[180] Yet, Christensen and others agree that China can and should do much more,[181] especially as the nuclear crisis continues to unfold. For example, China could suspend its economic aid to North Korea, restrict trade, limit cross-border interactions, and stop illicit activities by North Korea that are conducted through or from China—not to mention it could threaten to cease relations with North Korea.[182]

Of key importance to resolving the North Korean nuclear crisis is an understanding of the different objectives and strategies of each party involved. This analysis will only address the United States and China. In the view of Commission witness Dr. Friedberg, within the Six-Party Talks, the United States has focused on the process of the talks and on China's participation in the process.[183] Sitting down at the negotiating table was perceived as an accomplishment. On the other hand, China deflected U.S. attention from the question of whether the process produced results.[184]

China's approach to the Six-Party Talks reflects concerns about the effects of economic and political instability on its border if the North Korean regime falls. Dr. Friedberg testified that since the United States confronted North Korea in October 2002 about its nuclearization activities, China has refused to exert economic pressure on North Korea; instead, it has actually increased its assistance and trade.[185] Beijing has encouraged North Korea to adopt economic reforms modeled on China's policy of liberalization, in an attempt to integrate North Korea into the regional economy and to promote growth.[186] Thus, as noted by Dr. David Asher, Adjunct Scholar at the Institute for Defense Analyses and former senior ad-

visor to the U.S. State Department for East Asian affairs, "... China apparently believes that it can live with a nuclear-armed North Korea as long as the DPRK maintains its stability and is integrated gradually both economically and politically into the international community." [187] Its priority is to ensure that North Korea remains intact and is governed by a friendly regime.[188]

China has improved its relationship with South Korea as a counterbalance to U.S. influence of South Korea's diplomacy and approach to the nuclear crisis.[189] As both China and South Korea place high value on stability on the Korean peninsula, they appear determined to cooperate on a similar approach of "inducements" for North Korea, instead of "punishments." [190]

Experts agree that China's primary contribution to the Six-Party Talks has been bringing North Korea to the multilateral negotiating table, rather than producing any concrete movement by North Korea toward halting its nuclear development.[191] China remains reluctant to exert any pressure on North Korea that would challenge the stability of the regime. Ultimately, this establishes a contradictory set of objectives to those of the Six-Party Talks and supports maintenance of the status quo.

It has been more than a year since the last session of the Six-Party Talks. Dr. Friedberg warned, "If the present standoff continues, and Pyongyang begins to accumulate a substantial stockpile of fissile material, the danger that it will be tempted to sell or transfer some of it to terrorists or other rogue states is likely to grow." [192] Greatly complicating this picture, and threatening the continuation of efforts to rejuvenate the Six-Party Talks, is the low-yield nuclear test North Korea conducted in early October. As the figurative shock waves are fully felt in the power centers of Asia, one possible result is that other nations will conclude they now must obtain nuclear capability.[193]

In light of these developments, Dr. Asher urged the U.S. government to rethink its strategy for addressing North Korea's nuclearization [194] and the roles it, the other nations that have participated in the Six-Party Talks, and the United Nations can play to mitigate the damage that has been caused already.

China's Proliferation to Iran and Its Role in Iran's Nuclear Weapons Development

China and Iran have had a long relationship. More recently, during the 1990s, in order to meet its domestic reconstruction needs after the Iran-Iraq war and to offset a deficiency in domestic investment, Iran increased oil production to generate export revenues and increase its holdings of foreign reserves. At the same time, China's requirement for imported petroleum was growing substantially (it became a net oil importer in 1993), and China began to explore relationships in the Middle East to enhance its energy security.[195] Dr. Calabrese, of the Middle East Institute claims that the U.S. arms embargo and economic sanctions on Iran following the U.S. Embassy hostage crisis of the late 1970's opened the door for greater Chinese involvement in Iran, because they forced Iran to seek alternative economic partners.[196]

A significant aspect of China's current relationship with Iran is its continued support for developing Iran's weapons programs and

capabilities. Ilan Berman, Vice President for Policy at the American Foreign Policy Council, testified before the Commission that the trends in Sino-Iranian relations are toward a growing proliferation partnership and increasing security cooperation.[197]

Chinese companies and government organizations continue to assist Iran in creating self-sufficient ballistic missile capabilities. In August 2006, the U.S. Department of the Treasury sanctioned the Great Wall Airlines Company Limited, a cargo airline jointly owned by Chinese and Singaporean firms, for transporting missile-related and dual-use components to Iran's military.[198] Assistant Secretary Rodman also mentioned that "a Chinese firm continued to supply probably MTCR-controlled items and dual-use items to an Iranian missile production organization in late 2005 and 2006 and has prepared other raw materials for shipment to Iran," and that a Chinese "serial proliferator" located in Beijing has supplied materials to Iran's missile industry since at least 2004.[199] China also has delivered missile guidance systems and solid-fuel missile technology to Iran.[200]

Additionally, China has allowed the transfer of weapons and technology across its territory from North Korea to Iran (and other locations). A Congressional Research Service report on China's proliferation record states that, "[f]rom April to July 2003, China reportedly gave overflight rights to Iranian Il-76 cargo planes that flew to North Korea at least six times to pick up wooden crates suspected of containing cruise missiles."[201] After U.S. protest in June 2005, China denied over-flight rights for an Iranian plane departing from North Korea.[202]

Furthermore, China has supported Iran's development of chemical weapons. On December 23, 2005, the Administration imposed sanctions on the North China Industries Corporation (NORINCO) and five other Chinese companies for missile and chemical weapons proliferation.[203] Despite the sanctions, Mr. Berman testified that Chinese firms remain actively engaged in transferring dual-use items that could be used to develop a chemical weapons stockpile.[204]

A primary concern for U.S. security is that these transferred items and technology will in turn be transferred outside Iran to its proxy groups or to other rogue nations. Even if it desired to assert such control, it would be very difficult for China to control such third party transfers. The consequences of such transfers could seriously damage Chinese and American interests in the Middle East by threatening regional security. For example, Assistant Secretary Rodman confirmed that during July 2006, Hezbollah used Chinese-designed C–802 "SILKWORM" anti-ship cruise missiles,[205] which Mr. Berman testified the Israeli government had no knowledge Hezbollah possessed,[206] to attack an Israeli naval vessel. In this way, China's transfer of these missiles to Iran played a role in the conflict between Israel and Hezbollah.

Although China's missile sale was a conventional weapons transfer, the willingness of Iran to retransfer these items to a terrorist organization heightens U.S. concerns over China's willingness to provide arms to Iran. Not only could terrorist organizations use Chinese arms obtained from Iran to disrupt the region, but Iran itself could use Chinese arms against U.S. troops or our allies in the region.

Additionally, Dr. Ehsan Ahrari of Strategic Paradigms Consultancy testified that China's transfer of military items and technologies to Iran may affect U.S. relations with Taiwan. He argued that Beijing uses its transfers as leverage in negotiating with the United States concerning U.S. military transfers to and other support for Taiwan.[207]

While China suspended the sale of nuclear reactors to Iran and in 1997 secretly promised not to aid Iran's nuclear program, Director of Central Intelligence George Tenet said in 2003 testimony to Congress that Chinese firms might be involved with Iran's nuclear program; this statement was reaffirmed in 2004 by the Director of the Defense Intelligence Agency.[208] Although China's missile proliferation to Iran has flourished, Assistant Secretary DeSutter noted in 2006 that China's nuclear activities with Iran have waned in response to the international attention paid to Iran's nuclear program.[209] Despite the lack of evidence of direct transfers, some experts believe that China continues to support Iran's technological advancements and training of nuclear physicists.[210]

In 2004, the International Atomic Energy Agency (IAEA) reported that Iran failed to disclose its nuclear programs and also failed to meet its obligations under its safeguards agreement.[211] China wanted to resolve this issue within the IAEA and resisted referring the Iran case to the U.N. Security Council. It maintained this position even after it voted in February 2006 to support a resolution reporting Iran to the Security Council. In May, after China and Russia blocked a Security Council resolution under Chapter VII of the U.N. Charter, which could have authorized U.N. economic sanctions against Iran, the United States agreed to support a new diplomatic effort.[212] This resulted in a presentation to Iran in June by the United States, the other permanent members of the Security Council, and Germany of a package of incentives to end its uranium enrichment program and allow IAEA inspections.[213] Iran announced that it would review the offer and respond in late August.

On August 1, with China voting in favor, the U.N. Security Council passed Resolution 1696,[214] demanding that Iran suspend enrichment activities and implement IAEA transparency measures; endorsing proposals by China and others for a "long-term comprehensive arrangement" intended to restore confidence in Iran's peaceful nuclear program; and expressing the intent of the Security Council to take additional measures if Iran does not comply with the resolution.[215] Although, on first impression, China's vote in favor of this resolution may seem inconsistent with its past positions concerning nuclear activity by both Iran and North Korea, in fact it is very much in character: typically China will endorse, or at least will not impede approval of, multilateral statements condemning internal actions of another country, but will not support the imposition of sanctions on the country. China has worked consistently to prevent multilateral sanctions against Iran because of its belief that sanctions violate state sovereignty.[216]

Prior to the August 31 deadline set by the Security Council, Iran denounced the demands to abandon its nuclear work. China responded by reiterating both its desire for Iran to halt its program and its opposition to sanctions, saying, "China has always believed

that seeking a peaceful resolution to the Iranian nuclear issue through diplomatic talks is the best choice and in the interests of all parties concerned."[217] Regardless of China's support for Security Council Resolution 1696, Assistant Secretary Rodman concluded that China and Russia both have failed to "back up this vote with action."[218]

Mr. Berman testified that China's obstructionism and moral support for the Iranian nuclear program have created "international deadlock" and allowed Iran to continue development of its nuclear capability.[219] Also China's willingness to provide materials and technical assistance without political constraints and preconditions[220] strengthens relations between the two countries and lends support to the argument that another significant motivation for Iran's relationship with China is to diminish U.S. primacy in the Middle East and elsewhere.

On the other hand, China's relations with Iran primarily are driven by its need for oil,[221] and concern that Iran could deny China access to oil there. (See this Report's section on China's energy activities [Chapter 2, Section 3] for more information on Sino-Iranian energy cooperation.) China does not perceive the possible development of Iranian hegemony in the Middle East as a significant threat as long as its ability to obtain petroleum from Iran remains stable.[222] Moreover, Mr. Berman testified that Iran's nuclearization likely will instigate a new arms race in the region. China stands to benefit materially from purveying arms to the nations caught in such a race, especially if Saudi Arabia modernizes its ballistic missile arsenal; this may further impede efforts to enlist effective Chinese participation in multilateral efforts to slow or stop Iran's nuclear development.[223]

As a result of the link between China's economic diplomacy toward Iran and its political opposition to international efforts to limit Iran's nuclear weapons development, the United States cannot rely on China to play a constructive role in the resolution of this crisis, especially if that resolution involves imposing sanctions on Iran.[224]

Mr. Berman concluded that China's support of Iran is logical.[225] He believes that China's objectives in supporting Iran parallel U.S. objectives in supporting Saudi Arabia,[226] in that the vital role Iran plays in helping to meet China's energy needs takes precedence over China's concerns and considerations in other areas.

Assistant Secretary DeSutter concluded that sanctions applied to Iran with the support of China and Russia are likely to produce the most desirable outcome to the Iran nuclear crisis.[227] Moreover, Mr. Berman maintained that if the United States wants China to cooperate in approving and implementing multilateral sanctions, U.S. policy should "be aimed at providing the Chinese government with the proper information about the scope and maturity of the Iranian threat."[228] The United States should be demonstrating how Chinese interests will be severely damaged if China is not involved actively in sculpting a peaceful resolution to this crisis,[229] and spelling out to Chinese officials how other options for pressuring Iran to stop its nuclearization would be more invasive and destructive to Iran's economy,[230] and potentially to China's investments in Iran.

Becoming a Responsible Stakeholder in Nonproliferation

China has a history of proliferation, but since 1991 has made numerous nonproliferation commitments both in the form of multilateral agreements and in the form of domestic policies and laws.[231] Yet, despite China's enactment of export control laws and other domestic nonproliferation laws and requirements, and its accession to several multilateral nonproliferation treaties and regimes, China's proliferation activities continue to raise concerns, especially when they violate China's international agreements. China's laxity in this respect does not adequately support international peace and stability, diplomatic resolutions to proliferation challenges, or the improvement of U.S.-China relations.

The Commission believes that responsible stakeholders effectively participate in international efforts to prevent proliferation; ensure they are not themselves proliferation sources or being used as proliferation conduits; and honor the commitments they have made to multilateral nonproliferation treaties and regimes, agencies, and efforts.

The Commission believes that for a nation to combat proliferation activities effectively, it must establish strong export control and transit control laws and regulations;[232] ensure that manufacturers and merchants know and understand those laws and regulations; and impartially and consistently enforce those laws and regulations. China's record in this respect reveals many gaps and lapses, and these need to be called more forcefully to China's attention. Some of these are attributable to weak or ambiguous laws or regulations; some are attributable to weak support by the central government, sending the signal that violations may not be seen as serious infractions; some are attributable to insufficient penalties for violations, which proliferators simply accept as "a cost of doing business;" and some are attributable to inadequate commitment to enforce laws and regulations, including insufficient dedication of resources to border control and other enforcement efforts.

Assistant Secretary of State DeSutter stated that the role of the United States and its friends and allies is to monitor "the will of the Chinese government to take the concrete steps necessary to implement [its] regulations clearly and fully, with vigor and transparency."[233] Deputy Assistant Secretary of State Christensen noted in his testimony that the United States needs to refer to China's own legal requirements to identify enforcement lapses.[234] Additionally, Assistant Secretary of Defense Rodman asserted that China's domestic nonproliferation efforts should focus on tightening export control regulations to eliminate ambiguities, addressing deficiencies in criteria for licensing, improving mechanisms for identifying potential export control violators, and developing procedures for enforcing border controls.[235] In this regard, China needs competent technical assistance in establishing and operating an export control system that meets international standards.

In addition to adhering to internationally-accepted rules and standards, responsible leading nations also must act to enforce those rules and norms when other states fail to comply.[236] If it is to secure recognition as a responsible stakeholder, China not only must demonstrate its adherence to its international nonproliferation agreements and its own laws and regulations, it also must

align its interests with those of the international community and work constructively as a member of that community to obtain compliance with the community's standards and objectives rather than pursuing only China's unilateral advantage.[237] China's actions to date with regard to the North Korean and Iranian nuclear crises suggest that it has not reoriented its policies or objectives in this way.

China has taken some favorable steps. In 2004 China joined the Nuclear Suppliers Group (NSG),[238] a multilateral nonproliferation/export control regime. China also has supported U.N. Security Council Resolutions 1540, 1695, and 1696,[239] all of which affirm the necessity of international cooperation to curb proliferation. However, China has continued to resist imposing sanctions on either Iran or North Korea for their nuclear proliferation activities (although after North Korea's October 2006 nuclear test China supported "carefully targeted" sanctions on North Korea). But to date, China has not effectively leveraged its position of power and influence with either nation to obtain a suitable resolution to those two crises. Further, China so far has been unwilling to join or participate in the multilateral Proliferation Security Initiative[240] intended to strengthen efforts to prohibit and prevent the international transfer of banned weapons and technology.

SECTION 3: CHINA'S ENERGY NEEDS AND STRATEGIES

> The Commission shall investigate and report on "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 through joint research and development efforts and technological assistance) in influencing the energy policy of the People's Republic of China."

Key Findings

- China's strategy of securing ownership and control of oil and natural gas assets abroad could substantially affect U.S. energy security—reducing the ability of the global petroleum market to ameliorate temporary and limited petroleum supply disruptions in the United States and elsewhere.
- In 2005, China became the second largest international oil consumer after the United States, with a daily demand of 5.5 million barrels per day.[241] In 2006, China will account for 38 percent of the total growth in world oil demand.[242] The continuation of China's dramatic year-over-year increases of nearly half a million barrels per day (an increase of approximately 16 percent in 2005 and 14 percent in 2006)[243] in petroleum consumption will place growing stress on the world's energy resources and distribution systems, which will affect the supply available to the United States and the cost of that supply.
- China's energy policies, taken as a whole, are not consistent with the economic or geopolitical behavior of a responsible stakeholder; they distort markets and destabilize volatile regions. As

China's energy needs and consumption grow, its failure to observe these international norms becomes increasingly problematic.

- The air pollution resulting from China's energy use policies and practices not only is exacting a toll on the health of China's population and ecology but also is detrimentally affecting the air quality of the western United States.
- In recent years, China has made progress in instituting, codifying, and enforcing environmental standards and controls relating to fuel consumption and has pursued cleaner coal-burning technologies, but still faces a daunting air and water pollution crisis. If China does not address these problems aggressively, it will exacerbate what is already an environmental catastrophe.
- Some U.S. cooperative efforts with China on energy efficiency and environmental friendliness have realized success, offering limited encouragement that the rate of growth of China's energy consumption can be slowed and the environmental consequences of its energy use mitigated. Such results are profoundly in the interest of the United States as well as China.

China's Energy Security Policy

China's energy security policy has three main objectives: to secure an adequate energy supply to meet industrial, residential, and transportation needs; to keep prices low for domestic consumption; and to ensure secure delivery.[244] The government's determination to continue strong economic growth, intensified by its fear of domestic instability if growth slows, is of key importance in the formulation of Beijing's energy policies.

Because of this sector's importance, the government has been reluctant to relinquish control of the energy sector to private or quasi-private organizations. Similarly, the government has been unwilling to trust the world's free market dependably to meet China's petroleum needs; it views state ownership of energy assets, i.e. production of its own reserves and purchasing oil at the wellhead, as more secure than reliance on the world market for trade oil.[245] This concept is fundamentally at variance with the concept of energy security to which the United States adheres: participation in and dependence on the international market and diversification of resources. This constitutes a significant difference in approach between the United States and China. That difference was raised in mid-2005 when the Chinese National Offshore Oil Corporation (CNOOC) sought to purchase the American oil company Unocal in order to acquire and control its reserves located in various portions of the globe.

China has enunciated and demonstrated a commitment to diversify geographically its sources of petroleum. Deng Zhenghong, Enterprise Manager for Chinese national oil company Sinopec, emphasized the need for petroleum imports and the strategy of Chinese overseas oil activities when he stated that China's overseas oil investments follow a "sixteen character guideline": "Consolidate the Middle East, develop the surrounding regions [border states including those in Central and Southeast Asia and Russia], expand in Africa, and explore the Americas."[246] This principle emphasizes di-

rectly connecting with resources abroad, without relying upon multinational companies.[247]

China's preference for equity oil investments abroad (of purchasing oil at the wellhead) is officially termed the "go-out strategy,"[248] and China is pursuing this strategy vigorously. From the 1990s to 2005, China's cumulative overseas investment in oil and gas was $7 billion;[249] from June 2005 to June 2006, the value of China's acquisitions was $11.97 billion.[250] This represents a dramatic upswing in China's equity oil investments, and although China's holdings and current production do not represent a significant proportion of global oil reserves, they document an assertive policy to secure oil at the wellhead.

China relies upon its national oil companies to implement this "go-out" policy. As expressed in 2004 by Tan Zhuzhou, President of the China Petroleum and Chemical Industry Association, "This involves Chinese firms proactively going out to other parts of the world such as Africa and South America and applying their technical expertise and financial resources to the exploitation of oil resources there. This will enable us to secure multiple sources, avoid the risks of over-dependency on any one source and reduce the effects of price fluctuations."[251] China seeks geostrategic opportunities through its energy acquisitions, and its companies display more willingness to assume risks above those normally accepted by Western oil companies. Chinese national oil companies prefer to invest where countries have energy resources; where Chinese companies face limited competition due to the absence of U.S. oil companies;[252] or where the United States or other countries will not invest for moral reasons.

Although there have been public offerings of the stock of some of China's oil companies, the central government remains the sole or majority shareholder in most of those companies.[253] A report on China's overseas oil investments commissioned by this Commission concluded, "China's three major state oil firms, which the government has sought to nurture, giving them pride of place among the country's state-owned enterprises, have also acquired considerable influence over energy policy."[254] It is not surprising that this directly affects how they prioritize and strategize their investments.[255] These oil companies operate partially according to commercial principles, but in essence they also act as quasi-government organizations looking to shape and to fulfill a national security strategy.[256]

Their ownership and control also significantly affect the financial strength and flexibility the national oil companies can employ in pursuit of their objectives. Their deep-pocket financing was raised as an issue during the CNOOC bid for Unocal last year. Another concern is that Chinese firms do not face the same reporting obligations to their government or investors, which complicates the ability to track their transactions with foreign governments.[257] As Dr. Erica Downs, a China Energy Fellow at The Brookings Institution, explained in testimony before the Commission, "... China's national oil companies are employing a number of tactics that are unavailable to the international oil companies because ultimately it comes down to different shareholder values ... the government

is willing to accept a lower rate of return than that which international oil companies accept."[258]

Underlying the "go-out strategy" is China's hope that, in a time of a global petroleum supply crisis, the direct production of oil in various overseas locations by Chinese oil companies can ensure China will continue to receive the supply of oil it needs.[259] However, Dr. Downs pointed out in her testimony that this concept is complicated by several vulnerabilities China currently faces, namely the price of oil, and its transportation.

Given that such a high proportion—43 percent in 2004[260]—of the petroleum China consumes is acquired externally through imports (and that this proportion is anticipated to increase as demand increases in accord with projections), China's energy security relies to a considerable extent on the ocean tankers that transport oil and natural gas to China from abroad. The 2006 Department of Defense report on the *Military Power of the People's Republic of China* noted that more than 80 percent of China's oil imports passed through the Strait of Malacca.[261] As a result, "China believes that it is vulnerable to disruptions of sea lines of communication (SLOCs) due to U.S. naval dominance, and to potential security problems in the Straits [sic] of Malacca."[262]

In November 2003, this perceived vulnerability was enunciated by President Hu Jintao when he discussed the "Malacca dilemma" at an economic conference in Beijing. President Hu expressed concern about "certain powers" that have "encroached on and tried to control the navigation route through the strait," and he urged China to develop a new oil security strategy.[263] Cortez Cooper, Director of East Asian Studies at Hicks and Associates, Inc., described one likely strategy in his testimony to the Commission when he noted that because of China's increasing reliance upon petroleum imports and international trade, Beijing hopes to concentrate on the Strait of Malacca, the Indian Ocean, and the Persian Gulf, including developing blue water naval capabilities that can operate at such a distance from China.[264] Additionally, China has pursued "acquisition of naval port-call rights along the sea lanes of the Indian Ocean and Arabian Sea, [and] arms sales to countries with which Chinese oil companies have contracts . . ."[265] in an attempt to improve oil transportation security.

Further, in 2005 only nine percent of Chinese oil imports were transported to China using Chinese-owned ships;[266] it must rely substantially on other countries' vessels for the majority of its oil and gas imports. This situation undoubtedly is a source of discomfort and concern to the Chinese leadership, and has prompted Chinese leaders to recognize the importance of a "strategic transport system" and call for an expanded supertanker fleet to increase China's oil transport capacity.[267]

Another way China is responding to these transportation vulnerabilities is to try to construct or acquire pipelines that can be used to transport oil and gas directly from oilfields to China. Recently China has worked aggressively to obtain or construct pipelines to or through Central Asia,[268] including lines from Iran and Kazakhstan. As Dr. Downs noted, China perceives "overland imports" as more secure than "seaborne imports"[269] because "overland imports" do not traverse sea lines of communication that China

cannot protect. Moreover, construction and use of direct pipelines between Central Asia and China are not dependent on Russia's agreement.[270] Notwithstanding its concerns about Russia, China also has sought construction of a pipeline that would carry petroleum directly from Russia.[271] In these ways, China is attempting to minimize the risk of significant supply disruptions. U.S. concerns about pipelines with a Chinese terminus stem from the fact already described: Wherever it can do so, China is developing petroleum fields so it fully controls the oil and gas they produce, and pipelines facilitate its actualization of this strategy.

Historically, China's energy policy has emphasized "supply expansion over demand moderation,"[272] and this has produced a dramatic rise in energy consumption over the past 15 years. Energy efficiency and conservation have not been major objectives. According to the National Development and Reform Commission, one of China's energy policy-making bodies, China's energy efficiency falls 10 percentage points below that of the aggregate of developed nations, indicating a significant waste of the energy resources China currently has and is using.[273]

China's energy situation and policies are greatly complicated by the severe environmental pollution of the air, water, and soil resources that results from the emissions from burning fossil fuels. This is having calamitous effects on the health of the Chinese people and producing acid rain, polluting the water and soil, and producing carbon dioxide. Among the consequences for China are increased health problems and consequent demands for medical care, environmental degradation, and social unrest that threatens the stability and order so valued by China's leadership. This unrest is illustrated by a December 2005 incident near the border with Hong Kong that occurred when villagers who feared construction of a coal-fired energy plant would increase pollution confronted police and reportedly were fired upon.[274]

The evidence suggests that China's leadership is awakening to a number of these problems and is taking steps to try to mitigate them. The government has begun to encourage energy consumers to moderate their energy demands rather than reflexively to assume the only acceptable response to increased demand is to find a way to increase the energy supply.[275] This has included some "aggressive energy initiatives" aimed at simultaneously improving energy efficiency while increasing domestic energy production.[276] Principal Deputy Assistant Secretary of Energy Katharine Ann Fredriksen described these to the Commission, including large-scale coal liquefaction projects, new power plants fueled by natural gas, energy efficiency improvements in large buildings, and use of alternative and renewable energy resources.[277] In addition, China has adopted aggressive automobile gasoline mileage standards and has instituted a new tax structure on passenger cars designed to reward owners of economical vehicles.[278] While new laws have been enacted to address environmental and efficiency concerns, problems with implementation and enforcement persist.

China's Energy Supply

Coal

Reflecting the significance of coal in China's energy picture, Dr. Downs testified that "Coal is king in China." Coal provides approximately two-thirds of China's total energy needs, and demand continues to increase, spurred by urban growth and industrialization.[279] China consumes more coal than the United States, the European Union, and Japan combined.[280] China's large domestic reserves enable it to be essentially self-sufficient in coal production, and the government monitors coal prices to keep them artificially low for the public.[281]

Environmental pollution and risks to public health are prominent results of China's high coal consumption. As a comparison, China's fossil fuel combustion released 22.5 million tons of sulfur in 2004, more than twice the amount released by the United States.[282] It produces acid rain and contributes to 400,000 premature deaths a year in China.[283] Dr. Downs testified that China recognizes the significant environmental and political costs of burning coal.[284] The Chinese government has been working with the U.S. Department of Energy's Fossil Energy Office to develop and implement pollution controls,[285] but the objective of lowered emissions can only be achieved if major investments are made in clean coal technologies, and to date China has been unable or unwilling to make sufficient investments of this kind.

Coal has a very low cost relative to the cost of other energy resources in China, partly due to government pricing policies. Those who use it are either unable or unwilling to afford the cost of more expensive cleaner fuels. Continued dependence on coal, in turn, creates a disincentive for increased investment in developing fuel processes that are cleaner but also affordable. Nonetheless, there are some glimmers of hope. As Principal Deputy Assistant Secretary Fredriksen noted in her testimony, China has participated in the U.S. Department of Energy's FutureGen initiative, which "seeks to realize the world's first near-zero emissions power plant that will produce electricity and hydrogen from coal while capturing and storing carbon dioxide."[286] China also has been considering investing approximately $24 billion in large-scale coal liquefaction projects which, if completed, could replace up to one million barrels of oil per day.[287]

Oil and Natural Gas

Oil accounts for approximately 23 percent of China's energy consumption. In 2005, China became the second largest global oil consumer after the United States, with a daily demand of 6.5 million barrels per day.[288] By 2030, the Department of Energy predicts that China's oil needs will equal 13 percent of global demand.[289] Facing a decline in domestic production,[290] China has increased offshore production and is attempting to enhance residual oil recovery in existing fields. China hopes that offshore production eventually will become its largest source of domestic oil.[291] To bridge the gap between domestic demand and supply, China relies upon oil imports, which have risen in recent years. Overall, China imports at

least 43 percent of the oil it needs.[292] Until 2006, Saudi Arabia had been China's largest source for crude oil imports, but in February, Angola moved into first place.[293]

To secure sufficient petroleum imports, China has focused on equity investments, and has been looking beyond its traditional principal suppliers in the Middle East. China made new petroleum investments from June 2005 to June 2006 in thirteen countries, including Angola, Nigeria, Equatorial Guinea, Venezuela, Canada, Peru, and Syria.[294] However, these investments do not necessarily represent immediate increases in production; rather, they indicate potential production and an expansion and diversification of China's oil investments.

Below is a chart representing China's equity investments from June 2005 to June 2006:

China—Upstream Investment and Reserve Holdings[295]
June 1, 2005–June 1, 2006
(bbl = barrels)

Country	Interest	Investment Category	Contract Details	Value of Investment	Proven Reserves	Date of Transaction
Angola	Block 15	Oil	Joint venture (20% stake, Sinopec)	$982 million	700 million bbl	May-06
Angola	Block 17	Oil	Joint venture (25.5% stake, Sinopec)	$1.1 billion	255 million bbl	May-06
Angola	Block 18	Oil	Concession (40% stake, Sinopec)	$1.1 billion	280 million bbl	May-06
Canada	Northern Lights (Athabasca) project	Oil sands	40% Sinopec stake in Synenco oil sands project	$84 million	596 million bbl (bitumen)	Jun-05
Ecuador	Block 15	Oil	PSA (40% stake, CNPC and Sinopec)	$1.42 billion	36.4 million bbl	Sep-05
Ecuador	Tarapoa and Shiripuno fields, block 14, block 17	Oil	Concessions (100% of Tarapoa and Shiripuno, 75% block 14, 70% block 17)	Value Included in the line above ($1.42 billion)	125.6 million bbl	Sep-05

China—Upstream Investment and Reserve Holdings [295]—Continued

June 1, 2005–June 1, 2006

(bbl = barrels)

Country	Interest	Investment Category	Contract Details	Value of Investment	Proven Reserves	Date of Transaction
Equatorial Guinea	Block S	Oil	PSC signed by CNOOC	Undisclosed	Unknown (exploration contract; block surrounds the 300 million bbl Ceiba field)	Feb-06
Kazakhstan	PetroKazakhstan	Oil	CNPC purchased Canadian firm PetroKazakhstan	$4.2 billion	550 million bbl	Oct-05
Kenya	Blocks 1, 9, 10A, L2, L3, L4	Oil	PSCs signed by CNOOC, covering 115,000 km²	Undisclosed	Unknown (exploration contract)	May-06
Nigeria	OPL 471, 721, 732, 298	Oil	CNPC purchased Canadian firm PetroKazakhstan	$16.04 million (low signature bonuses in return for large downstream investments)	Unknown (exploration contracts)	May-06
Nigeria	Akpo Field (offshore license 130)	Oil	PSA (45% stake held by CNOOC)	$2.4 billion	600 million bbl	Jan-06
Peru	Blocks 111 and 113	Oil	E&P contracts signed by CNPC	$83 million	Unknown (exploration contract)	Dec-05
Syria	Stake in Al-Furat Petroleum Co.	Oil	17% stake held by CNPC in Al-Furat Petroleum Co.	$586 million	66.3 million bbl	Dec-05
			TOTALS:	**$11.97 billion**	**3.2093 billion bbl**	
				1147.71 bn bbl	Global proven reserves	
				3.21 bn bbl	Chinese overseas acquisitions (2005–2006)	
				0.3%	Chinese acquisitions as percentage of total world reserves	

Of China's national oil companies, the China National Petroleum Corporation (CNPC) has been most active and successful in acquiring assets abroad; CNPC currently holds exploration and production contracts in 21 countries.[296] Sudan is the site of China's largest overseas production,[297] and CNPC has invested more than $8 billion there; these investments include a field in southern Darfur.[298] China not only invests in exploration and production in Sudan, but also in Sudanese pipelines to transport pumped oil to Red Sea refineries.[299] In October 2005, CNPC purchased PetroKazakhstan, a Canadian-owned company whose assets include pipelines that will be used to transport oil from Kazakhstan to China.[300] In August 2006, CNPC and the China Petroleum and Chemical Corporation (Sinopec) agreed to jointly invest $5 billion in exploration and production projects in Venezuela.[301]

Sinopec, however, operates primarily in Iran. In 2004, Iran awarded Sinopec the rights to develop the Yadavaran oil field, expected to produce 150,000 barrels per day, in exchange for China's commitment to purchase ten million tons of liquefied natural gas each year for 25 years.[302] By means of this combined upstream-downstream investment project, China significantly increased its supply of oil and natural gas. In 2006, Sinopec signed another deal with Iran to explore the Gamsar oil block, valued between $20 million and $59 million over a four-year period.[303] Also, in August, Sinopec and an Indian national oil company jointly acquired a stake in Colombia's Ominex oil company. This illustrates a decision by China and India to partner in the search for energy resources.[304]

China's international petroleum activities have not been limited to supply acquisition. Deputy Assistant Secretary Fredriksen noted that China's "lack of adequate refining capacity suitable for heavier Middle Eastern crude oil" is a major concern for its leadership.[305] To address this, China is collaborating with Saudi Arabia to build joint-venture refineries in Quanzhou and Qingdao, and is building a refinery in Xinjiang province to refine oil transported by pipeline from Central Asia.[306] In July 2006, PetroChina completed an expansion project on a Dalian-based refinery, making that refinery the largest in China.[307] Additional projects are under construction in Fujian and Guangdong provinces. China is also investing in the refining capabilities of countries with which it currently has equity investments. It is helping Angola build a refinery, expected to begin operation in 2010;[308] in July 2006 China signed a $2.7 billion agreement with Iran to upgrade Iranian refining capacity.[309]

Natural gas has not yet become the major actor in the energy sector in China that it has become in the United States, primarily because China lacks an adequate distribution system for natural gas; this limits its use and contributes to its price being higher than that of coal.[310] Even so, consumption of natural gas is steadily increasing. In June 2006, China became a natural gas importer when the Guangdong liquefied natural gas import terminal opened.[311]

To ensure an adequate supply, China also has attempted to expand its access to natural gas. This is presumed to be one of the factors in last year's attempt by CNOOC to purchase U.S. oil company Unocal that holds significant natural gas assets. China has committed to purchase approximately 1 trillion cubic feet of gas in

Turkmenistan beginning in 2009. It also is seeking natural gas from Uzbekistan.[312] China also has entered a 30-year contract with Burma to purchase 6.5 trillion cubic feet of natural gas,[313] which may complicate U.S. and U.N. efforts to obtain changes in the political situation there.

As explained previously in this section, China is working to construct or acquire pipelines, especially in Central Asia, for both oil and natural gas in order to reduce the risks of transporting these commodities to China. China's primary partner in this initiative is Kazakhstan, which China views as the "gateway to Caspian oil and gas reserves."[314] A 620-mile pipeline from Atasu in northern Kazakhstan to Xinjiang province became operational in May 2006, although Dr. Martha Brill Olcott of the Carnegie Endowment for International Peace testified that sufficient oil to fill the pipeline is not yet available.[315] China also has proposed building a pipeline across Burma into Yunnan province in southwestern China that would transport Burmese natural gas and possibly serve as an alternate route for Middle Eastern oil to reach China, thereby minimizing use of the Strait of Malacca.[316]

In 2004, China announced plans to construct a strategic-petroleum reserve (SPR) intended to hold stockpiles equivalent to 90 days of imports.[317] Construction of the Zhenhai reserve, one of four being built in China, was completed in the summer of 2006 and was expected to be ready for use in October 2006.[318] Although China is not a member of the International Energy Agency (IEA), the stockpile China is developing comports with IEA's standards for the SPRs of IEA member nations. Deputy Assistant Secretary Fredriksen stated that this project is "one of the most significant developments" in China's energy policy,[319] because it will give China the ability to respond to an oil supply crisis by releasing its own reserves.

Because China is not bound by the obligations of IEA membership, it is uncertain if that is the purpose, or one of the purposes, for establishing its SPR. The Department of Energy has been discussing this issue with China, most recently in September in the U.S.-China Energy Policy Dialogue. Deputy Assistant Secretary Fredriksen noted that, "[w]hile commending China's efforts to build their first state-owned SPR, we have constantly reiterated that the SPR needs to be used to address supply disruption, not to affect global petroleum markets."[320]

Nuclear Energy

Although nuclear energy currently provides only a fraction of China's energy, China intends to build an additional 30 nuclear reactors within the next 15 years, allowing nuclear power to provide approximately five percent of the country's total energy needs.[321] Deputy Assistant Secretary Fredriksen stated that China is in the final stage of constructing a pressurized water reactor, and the United States is encouraging China to consider Westinghouse Electric Company's bid, the only one it received from a U.S. company.[322] In July 2006, China joined the Generation IV International Forum (GIF) Policy Group that collaborates on "nuclear energy system concepts" for future energy needs.[323]

Renewable Energy

China recently expressed interest in pursuing renewable energy as an option for diversifying its energy supply.[324] In February 2005, China passed the Renewable Energy Law that legalizes the regulatory framework for alternative energy sources and supports research and development and the creation of new facilities.[325] By 2010 China intends to supply 10 percent of its energy needs with renewable energy and has obtained financing for this endeavor from the World Bank and other institutions.[326] In addition, China has become the second-largest producer of hydroelectric power after Canada. With the construction of the controversial Three Gorges Dam and a series of dams on the Yellow River, China's hydroelectric capabilities will continue to grow.[327] Despite these developments, Dr. Downs testified that obtaining widespread use of renewable energy sources in China will be a significant challenge, especially because other fuel sources cannot compete with the low market price of coal, often because of the cost of equipment (e.g., windmills or solar panels) renewable energy sources require.[328]

The Debate About Equity Oil Investments

As China increases its equity stakes rather than purchasing oil on the international market, questions have surfaced as to the effect of China's investments on U.S. energy security. In this discussion, two divergent positions have emerged.

One line of thought is that China's oil acquisition strategy diverts oil that otherwise would enter the world oil market, and that this can result in harm to the market and the energy security of its participants including the United States. Those holding this view believe China's strategy is to try to "lock up" petroleum supplies for its exclusive use.[329] In contrast, the United States relies primarily on the international oil market for its oil imports. As international demand for oil increases in the face of a limited supply, economic theory predicts heightened competition that will drive prices higher. If China does not add to the world market the petroleum in the fields it owns and controls, other states must compete for what is left in that market, making the market's prices and supply more vulnerable to shocks and increasing the likelihood of conflicts over limited supplies in the event of a crisis.

If this is the Chinese strategy, it will be harmful to U.S. interests in other ways. Chinese petroleum acquisition efforts have resulted in Chinese actions to protect regimes in nations where China is obtaining petroleum, such as those in Khartoum and Tehran. According to Dr. Downs, "... the risk for Washington is that China's growing dependence on imported oil will increasingly prompt Beijing to give higher priority to oil than to international issues such as the protection of human rights, nuclear nonproliferation, and good governance."[330] As discussed previously in this section, China's oil companies often are active in countries such as Iran, Sudan, and Burma where U.S. oil companies are not present because of boycotts, sanctions, or high political and security risks. These regimes often expect—and receive—a quid pro quo from China. An Iranian newspaper explained that since "we have assured China that its energy and oil needs will be met, we should ask that country to

complete its position and go beyond mere expressions of opposition to the referral of Iran's dossier to the Security Council."[331] An additional concern is the extent to which China could affect domestic politics within a country where it is obtaining petroleum to ensure a favorable climate for its activities there.

The alternative line of thought in this debate about China's oil acquisition strategy is that China imports oil from its equity fields that it otherwise would purchase on the international market. This suggests that the effect of China's petroleum acquisition strategy is essentially neutral on the supply of energy available in the international energy market and on those nations that purchase through that market, including the United States. Therefore, China's strategy does not threaten U.S. energy security. Some go further to suggest that China's acquisition strategy may actually benefit the international market. As Deputy Assistant Secretary Fredriksen testified, China usually enters markets with "a higher geopolitical risk than a lot of private sector companies are willing to take on . . ., and so . . . every drop of oil that they now are mining . . . in those countries . . . is oil they're not taking off the international market."[332]

China's acquisitions currently are not significant in terms of the overall international oil market. Its acquisitions between 2005 and 2006—higher than total acquisitions in the previous 15 years—only totaled 0.3 percent of total world reserves.[333] This amount of oil is very unlikely to affect the world market appreciably even in a time of crisis. Additionally, a report on China's energy activities commissioned by this Commission concluded that China's oil companies could "lock up" resources only by "consistently outbidding other international energy interests and paying above-market rates. Such a policy, however, would strain China's already heavily subsidized retail fuels market, lead to unnecessarily high oil prices, and harm China's overall economy."[334]

During the Commission's 2006 hearings, Commissioners asked if China's equity oil is transported exclusively to China or if some is being sold on the market. If China is selling the oil it produces on the market, China cannot be charged with "locking up" supplies for its exclusive use. In support of this argument, Dr. Downs testified that "host countries tend to value the barrels of oil that are produced in their countries at the world market price."[335] Consequently, in a time of crisis, even if China can ensure the oil it produces abroad is delivered to China, the price it will pay likely will be comparable to the price it would have had to pay in the world market—and thus its acquisitions likely will be comparable to what they would have been if it participated in that market.[336]

However, the report on China's overseas investments commissioned by the Commission suggests the opposite. The contractor tracked China's investments through open sources in an attempt to document the number of barrels produced by the fields it owns and the number of those barrels that were transported to China. Although Chinese customs data only indicate countries of origin for China's oil imports, and do not identify the specific projects that were its sources, and Chinese oil companies do not reveal detailed information about their activities, the report concluded that "the amount of equity oil flowing into China in 2006 is only about

320,000 [barrels per day], out of total imports of 3.6 million bpd and total Chinese consumption of 7.4 million bpd . . . [M]ore than 90% of its imports do not originate with equity oil projects in which Chinese firms have invested."[337] Furthermore, the report found that while China has increased its investment activity, only two projects in Kazakhstan and Sudan currently produce more than 100,000 barrels per day in equity oil. Several projects in development, including the Yadavaran field in Iran, have the potential to produce more, but as yet that potential has not been realized.[338] Thus, while representing a small share of world reserves and Chinese imports, China's current production of equity oil approximately equals the amount of its equity imports,[339] implying that very little Chinese equity oil is being sold on the market.

For its part, Chinese leaders dispute charges that it is trying to "lock up" petroleum resources and have made a concerted effort to "allay U.S. fears of neo-mercantilist policy" by means of government pronouncements and cooperation with the United States in petroleum "upstream" and "downstream" projects.[340]

Is China a Responsible Stakeholder in the Energy Sector?

China's growing energy needs, and the necessity for it to seek energy supplies abroad, have created opportunities to gauge whether Beijing's energy sector policies and activities are those of a responsible stakeholder. In its international petroleum acquisition activities, Beijing is not acting as a responsible stakeholder, although its self-interested actions may reflect rational behavior intended to protect its own supply. The health of energy markets is crucial for sustaining the international economy, and acquiring oil through the market and according to internationally accepted norms for market behavior ensures a fair playing field for oil-importing countries. Yet, China's acquisition strategy does not support the world market and may prevent efficient allocation of resources, especially in times of global supply disruptions. Its strategy reflects a mercantilist view of global energy resources and does not promote international cooperation in addressing limited supplies of petroleum.

China has made progress in enacting laws and regulations that promote environmental protection and in developing and implementing energy efficiency technologies. Yet its progress continues to be impeded by China's domestic pricing policies that preserve coal's status as the cheapest energy source. Without establishing economic incentives for development and use of cleaner fuels and renewable energy sources, and for increasing energy efficiency, China's environmental problems will continue to worsen, and the transnational effects of China's pollution increasingly will affect other nations including the United States.

A derivative effect of China's energy acquisition policy and activities is that China has made it more difficult for the world community to secure acceptable resolutions to genocide and other humanitarian crises, nuclear proliferation, human rights violations, antidemocratic political activities, and corruption in several locations where it is active in petroleum extraction, including Sudan, Burma, and Iran. This is the case because China provides support to the purveyors of these deplorable circumstances in order to facilitate

its acquisition of petroleum and other resources those purveyors control.

RECOMMENDATIONS

China's Regional Activities

- The Commission recommends that Congress urge the Administration to seek direct dialogue and cooperation with China with regard to securing a resolution to the conflict in the Darfur region of Sudan that will halt the genocide occurring there and provide security and basic human rights for the affected population. Congress should instruct the Administration to report semiannually on China's actions in Sudan and any progress that has been made through dialogue with China.

- The Commission recommends that Congress encourage the Administration to intensify engagement with Latin American nations in light of expanding Chinese interests in the region.
- The Commission recommends that Congress encourage the Administration to seek observer status for the United States in the Shanghai Cooperation Organization and that Congress also encourage the Administration to monitor closely Iran's participation in this organization.
- The Commission recommends that in response to China's efforts to isolate Taiwan, Congress encourage the Administration to implement a long-term policy to facilitate Taiwan's participation in international organizations and activities for which statehood is not a prerequisite, such as the World Health Organization, the Community of Democracy, the Proliferation Security Initiative, and other multilateral public health, counterproliferation, counterterror, and economic organizations as appropriate. Congress should instruct the Administration to report annually on its actions to ensure that Taiwan is not isolated in the world community.
- The Commission recommends that Members of Congress, when visiting mainland China, also visit Hong Kong, and that Congress encourage senior Administration officials, including the Secretary of State, to make visits to Hong Kong part of their travel to China.
- The Commission recommends that Congress extend the reporting requirements in Section 301 of the United States Hong Kong Policy Act of 1992, P.L. 107-115, 22 U.S.C. 5731, for five more years.

China's Proliferation and Involvement in North Korea's and Iran's Nuclearization Activities

- The Commission recommends that Congress urge the Administration to seek high-level dialogue with China intended to obtain strengthened and expanded nonproliferation commitments and activities from China and, in particular, (1) to obtain China's agreement to participate in the Proliferation Security Initiative

and the Illicit Activities Initiative; and (2) to strengthen its export controls and their enforcement. Toward this end, the Commission recommends that Congress—

- direct the Administration to provide increased export control technical assistance to China, and
- appropriate funds to support that increased assistance.

- The Commission recommends that Congress urge the Administration to seek agreement with China to carry out inspections at sea of ships bound to or from North Korean ports and establish a U.S.-China joint operation to inspect for contraband all shipping containers being moved to or from North Korea when they pass through Chinese ports, in fulfillment of the obligations under U.N. Security Council Resolution 1718 to prevent the sale or transfer of missiles, and nuclear and other weapons-related materials and technologies, to and from North Korea.
- The Commission recommends that current sanctions against Chinese companies that proliferate equipment and technology related to weapons of mass destruction and their delivery systems be broadened and harmonized for increased effectiveness. The Commission recommends that Congress expand current sanctions regimes to extend penalties to the Chinese parent company of a subsidiary that engages in proliferation activities, regardless of the parent company's knowledge of or involvement in the problematic transaction. Access to U.S. markets (including capital markets), technology transfers, and U.S. government grants and loans should be restricted from proliferating companies and their Chinese parent companies and related subsidiaries irrespective of the related firms' knowledge of the transfers in question.
- The Commission recommends that Congress instruct the Administration to insist that China fulfill its obligations under U.N. Security Council Resolutions 1695 and 1718 and take more significant measures to denuclearize the Korean peninsula and counter North Korean proliferation activities. The Congress should further instruct the Administration to report semiannually about specific actions the Chinese government has taken in this regard.
- The Commission recommends that Congress instruct the Administration to engage in a strategic dialogue with China and report to Congress the specific actions that China is taking concerning (1) its past and current proliferation activities to Iran; (2) its public stance in support of Iran's nuclear energy program; and (3) the impact of Iran's secondary proliferating transfers, and to encourage Middle Eastern and European states to seek to persuade China's government to act more responsibly and diligently to curb Chinese proliferation to Iran.

China's Energy Needs and Strategies

- The Commission recommends that Congress support the Administration's current policy dialogues and technical exchanges with China pertaining to energy, and urge the Administration to seek additional opportunities for the United States to assist China to increase energy efficiency, reduce pollution from energy consumption, and facilitate the use of alternative fuels.

- The Commission recommends that Congress obtain detailed information on the nature, specific sources, and extent of China's air pollution, and its detrimental effects both in China and in the rest of the world, with specific attention to the effects in the United States.

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336. "China's 'Going-out' moved whose cheese?" *21 Shiji Jingji Baodao,* June 23, 2006. big5.southcn.com/gate/big5/www.southcn.com/finance/nfcm/21sjjjbd/200606230793.htm. See also U.S.-China Economic and Security Review Commission, *Hearing on China's Role in the World: Is China a Responsible Stakeholder?,* testimony of Erica Downs, August 4, 2006.

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338. Eurasia Group, *China's Overseas Investments in Oil and Gas Production,* presented to the U.S.-China Economic and Security Review Commission in fulfillment of contractual obligations, October 16, 2006, p. 4.

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340. John Keefer Douglas, Matthew B. Nelson, and Kevin Schwartz, *Fueling the Dragon's Flame: How China's Energy Demands Affect its Relationships in the Middle East,* presented to the U.S.-China Economic and Security Review Commission in fulfillment of contractual obligations, September 14, 2006, p. 22.

CHAPTER 3

CHINA'S MILITARY POWER AND ITS EFFECTS ON AMERICAN INTERESTS AND REGIONAL SECURITY

SECTION 1: CHINA'S MILITARY MODERNIZATION

> The Commission shall investigate and report on "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."

Key Findings

- China continues its extensive military modernization program. For the tenth year in a row, China's new annual military budget will reflect double-digit growth over the previous year's. According to Chinese government figures, the 2006 budget will increase 14.7 percent from the previous year to approximately $35 billion. The Department of Defense believes China's actual defense expenditures could be two to three times higher at $70—$105 billion.
- In the near term, among China's principal military modernization aims are to deter Taiwan from moving toward independence; to defeat and occupy Taiwan if it declares independence and to accomplish this before U.S. or other military assistance can arrive; and to deny U.S. forces the ability to intercede effectively in such a conflict and prevent China from prevailing.
- Despite calls for increased transparency, Beijing continues to shroud much of its military structure, activities, and intentions in secrecy, leading to increased chances for misunderstanding and potential conflict.
- China has recognized the profound effectiveness and strategic importance of force multipliers such as advanced command, control, communications, computer, intelligence, surveillance, and reconnaissance (C4ISR) capabilities employed by U.S. forces, and it is exerting great efforts to enhance its C4ISR abilities and integrate them in its military procedures. Once the People's Libera-

tion Army (PLA) achieves these objectives, it will be a much more effective and formidable fighting force.

- China's military intentions beyond Taiwan remain unclear. The PLA understands itself to be in an extended military competition with the United States.
- The PLA's doctrine recognizes that to succeed against a sophisticated potential adversary such as the United States, it must among other things be able to disrupt the adversary's C4ISR advantages through such means as attacking its computer and communications systems. Accordingly, the PLA is establishing information warfare units and capacities, and developing anti-satellite capabilities.
- China is pursuing measures to try to control the seas in the Western Pacific and developing space warfare weapons that would impede U.S. command and control.

Overview

In its February 2006 Quadrennial Defense Review Report (QDR), the U.S. Department of Defense warned of China's military potential. Specifically it noted that "Of the major and emerging powers, China has the greatest potential to compete militarily with the United States and field disruptive military technologies that could over time offset traditional U.S. military advantages absent U.S. counter strategies."[1] The QDR also stressed that the pace of China's military modernization effort puts regional strategic balances at risk.[2] Currently, China's military, the People's Liberation Army (PLA)[3], is undergoing a long-term, comprehensive modernization aimed at fighting conflicts of high intensity and limited duration near its borders.[4] This accelerating military modernization and buildup hold serious implications for the East Asian region, the United States, and, depending on China's long term global strategic aspirations, the world.

Currently, Beijing focuses on bolstering military capabilities to address Taiwan Strait scenarios.[5] China aims to prevent Taiwan from obtaining legal recognition as an entity independent from the People's Republic of China, and resolutely adheres to its ambition for unification with Taiwan in the long term under the rubric of "one China." This objective is of such significance that the Chinese government continues to threaten to achieve it—and prevent any substantial contrary movement—by force if that is necessary. In March 2005, China promulgated the Anti-Secession Law, a legal document that codified the authority to use force to counter Taiwan's moves toward further separation.

During 2006, cross-Strait tensions appear to have receded to a degree, and Chinese leaders have been less strident in their comments to and about Taiwan. Nonetheless, the United States accepts the reality of China's threat to use military force to prevent Taiwan from claiming or declaring independence from China. This would include military action to deter, deny, or delay outside assistance, including U.S. assistance, to Taiwan.[6] China's growing military capability may embolden Beijing to adopt a more aggressive approach toward Taiwan or parties to other disputes, particularly if there is

reason to believe the United States or others would be unlikely, unprepared, or unwilling to intervene.

China's military threat against Taiwan also presents an implicit threat to U.S. forces as a result of tacit U.S. defense assurances to Taiwan, particularly those contained in the Taiwan Relations Act enacted in 1979. That Act states that the United States will "provide Taiwan with arms of a defensive character" and will "maintain the capacity of the United States to resist any resort to force or other forms of coercion that would jeopardize the security, or the social or economic system, of the people on Taiwan."[7] Taiwan's successful conversion from authoritarian rule to a democracy makes it symbolically important to many Americans, and increases the likelihood that the United States would commit its forces to assist in defending Taiwan in a conflict with China. For these reasons, and because any cross-Strait conflict likely would result in massive humanitarian, economic, and political consequences throughout Asia and even in other portions of the world, it is very important to dissuade both Beijing and Taipei from taking steps that could endanger the status quo and lead to the outbreak of war. Toward this end, the United States seeks to maintain a credible deterrence to China's use of force against Taiwan, and, at the same time, encourages Taiwan to avoid rhetoric and actions that would inflame China while simultaneously "correct[ing] imbalances in the areas of air and missile defense, and anti-submarine warfare." Toward this end, the United States has offered to sell such defensive military systems to Taiwan.[8]

It is in U.S. interests to possess and deploy sufficient military capability (1) to persuade China that the United States can and will inflict severe injury on Chinese forces and objectives if it intervenes in a China-Taiwan conflict on behalf of Taiwan, and (2) to prevail rapidly and with low costs in battle damage and casualties should it intervene in such a conflict. It also is in U.S. interests to help Taiwan ensure its military is sufficiently robust to prevent China from landing a knock-out blow before American military forces can arrive and engage in a defensive effort.

Although there is no evidence China has near-term aspirations to acquire the military ability to project power around the globe in a way that would effectively compete with the United States, it is apparent that China is working to increase its military's reach in the Asia-Pacific region and beyond. This involves not only acquisition of new naval and air force weapons systems and capabilities, but also greater integration of forces in the PLA to improve its coordination and extend its reach beyond green-water territories.[9] This is not surprising given China's growing international commercial and diplomatic involvement. According to retired Admiral Eric McVadon, "an emerging China wants to build a military appropriate to the country that it is becoming."[10]

Increasingly, Chinese forces operate beyond China's immediate coast and borders.[11] Essentially, China is "at the very beginning stages of power projection capability."[12] Evidence suggests that Beijing's continued military development will allow it to extend power beyond the Taiwan Strait,[13] and that this is a Chinese strategic objective. With China's growing economic reliance on international trade, and the country's increasing dependence on im-

ported petroleum, it undoubtedly will increase its efforts to protect its sea lines of communication (SLOCs).[14] Cortez Cooper, Director of East Asian Studies at Hicks and Associates, Inc., stated in his testimony before the Commission, "By roughly 2020, Beijing hopes to be able to focus on the greater periphery, particularly the Strait of Malacca, the Indian Ocean, and the Persian Gulf. This obviously would require development of a blue water fleet and a strategic bomber force ... to conduct operations out to that distance."[15] China also could take advantage of a more advanced military to threaten use of force, or actually use force, to facilitate desirable resolutions of disputes over natural resources and territorial claims such as those with Japan.[16]

In response to China's military modernization program, the United States has realized the necessity of developing a strategy to "'encourage China to make the right strategic choices for its people while we hedge against other possibilities.'"[17] As Peter Rodman, Assistant Secretary of Defense for International Security Affairs, explained in his March 2006 testimony, hedging implies taking a realistic approach toward China's military ambitions, cooperating with allies in the Asian region to form a balance of power, and ensuring that our own military remains prepared for contingencies involving China.[18] Moreover, hedging encompasses the "measures we can take to reorient our global posture for the opportunities and the challenges of the 21st century."[19]

James Thomas, Deputy Assistant Secretary of Defense for Resources and Plans, underscored the fact that hedging is a prudent, historical methodology for addressing the changing military capabilities of other countries, especially when their intentions are not always clear.

China's Military Opacity

Beijing's military opacity contributes to the fear that China is becoming a growing threat in the Western Pacific, and possibly beyond. It also raises the chances for misunderstanding and military miscalculation.[20] According to the U.S. Department of Defense, "[t]he outside world has little knowledge of Chinese motivations and decision-making or of key capabilities supporting PLA modernization."[21] China's opacity has led and will continue to lead others to consider possible scenarios for conflict and to "hedge" accordingly.[22]

A central contributor to the opacity is China's active policy of deception and misinformation.[23] Dr. Jacqueline Newmyer, Senior Analyst with the Long-Term Strategy Project at Harvard University, defines this policy as corresponding to the traditional Chinese notion of military power, *shi*, that uses intelligence to surprise enemies with drastic policy changes or unexpected attacks.[24] To employ this traditional stratagem, China must place a high priority on spying to increase its intelligence advantage and also prevent others from collecting information about China; it accomplishes this through "concealment and deception."[25]

In his testimony to the Commission, Assistant Secretary Rodman noted that "We are caught by surprise by the appearance of new systems that suddenly appear fully developed."[26] China's active deception is compounded by its unwillingness to divulge information

or engage the U.S. military. For example, China's exclusion of the United States from certain security exercises, such as those in 2005 with Russian forces, indicates that China is unwilling to reveal meaningful information and intentionally obstructs U.S. efforts to achieve military transparency.

As one means of achieving greater Chinese military transparency, some defense analysts advocate increasing military-to-military contacts with China that will advance the exchange of information and allow opportunities to collect data.[27] Such contacts have been limited since the 2001 Chinese downing of a U.S. Navy EP–3 surveillance plane on Hainan Island.[28] Secretary of Defense Donald Rumsfeld's October 2005 trip to China produced an agreement to expand senior-level visits by defense officials.[29]

In May 2006, Admiral William J. Fallon, the commander of U.S. Pacific forces, visited Chinese military installations.[30] In June, Assistant Secretary Rodman traveled to China to discuss increasing military contacts.[31] Later that month a Chinese delegation accepted an invitation to observe a U.S. military exercise known as "Valiant Shield"[32] and the command ship of the U.S. Navy's Seventh Fleet, the *U.S.S. Blue Ridge,* visited Shanghai.[33] Most recently, General Guo Boxiong, Vice Chairman of the Central Military Commission and China's highest ranking general, visited the United States in July for a week-long tour, including visits to the National Defense University and the Navy's Third Fleet in San Diego.[34] These may be positive steps, but the Commission remains concerned that, because of the lack of reciprocity in access, they may disproportionately benefit the PLA. Military-to-military contacts with China should be calculated so that they do not increase the PLA's knowledge of U.S. military capabilities. Some charge that in the past China's military has not provided the same level of access that it has received from the U.S. military.[35] However, U.S. armed forces personnel were granted observer status for one day in the final phase of China's 2005 Northern Sword military exercise in Inner Mongolia—an exercise that involved roughly 16,000 PLA personnel.[36]

To reduce the number of surprises the United States encounters with respect to new or enhanced Chinese military capabilities and activities, it will be necessary for the U.S. intelligence community to increase its focus on China's military; its objectives, doctrine, and strategy; and its modernization efforts, and dedicate increased personnel and other collection and analysis resources to this purpose. If the focus and resource allocation are not commensurate with the assessment of the threat China potentially poses as stated in the Defense Department's QDR, the United States should expect repeated—and unpleasant—surprises from China, some of which may pose significant threats to U.S. interests.

China's Defense Expenditures

China's very substantial and rapidly growing investment in enhanced military capacity casts a shadow on its self-described "peaceful rise." From 1994 to 2004 China's publicly acknowledged defense budget grew at an average annual rate of 15.8 percent. This March, Beijing announced that its 2006 defense budget is expected to rise 14.7 percent from the previous year—from 244 billion

renminbi in 2005 to 280 billion renminbi ($35 billion).[37] However, China's budget does not include items commonly accounted for in military budgets, including procurements of weapons abroad; research and development expenditures; funding of paramilitary groups such as the People's Armed Police; and government subsidies to the defense industry.[38] Taking into account these missing figures and other transparency problems, the Department of Defense believes China's total military budget may be two to three times higher than the announced amount—in the range of $70—$105 billion.

China's military budgetary picture is ultimately "clouded by a multitude of funding sources, subsidies, and cutouts at all levels of government and in multiple ministries. Real spending on the military, therefore, is so disaggregated that even the Chinese leadership may not know the actual top line."[40] But the salient fact is that it is growing substantially on a sustained basis. And it appears that one key reason is to enable the Chinese military to obtain national objectives that run counter to U.S. interests.

According to a Defense Department specialist on China, the Administration has discussed military accounting and budgeting transparency with China, most notably when Assistant Secretary Rodman traveled to Beijing in June 2006 for the Defense Consultative Talks. The United States encourages China to adopt international standards for reporting military budgets and expenditures to facilitate the accuracy of estimates about China's progress and the nature, extent, and purposes of its military modernization.

Domestic Defense Industrial Capacities

China works to modernize its military and reduce reliance on imported military equipment and technologies.[41] This effort is advancing in some ways while still facing serious limitations in others.

For decades, the productivity, efficiency, and innovation of China's state-owned defense industries lagged well behind Western defense industries. Although "sweeping conclusions about the backwardness of the [Chinese] defense-industrial complex are no longer accurate" because of reforms initiated in the 1990's, comparably sweeping "claims about systemic reform are equally unwarranted."[42]

Beijing introduced "commercialization" principles to some defense industries, hoping to improve their capacities[43] and make them more responsive to the PLA's modernization needs and improve efficiency.[44] Layoffs and consolidations constitute part of the means for reaching these goals. As China's defense budget continues to grow, so do the resources and sales generated by these companies, allowing them to improve equipment and attract increasingly qualified employees.[45]

According to Dr. Roger Cliff, Senior Analyst at the RAND Corporation, "China's defense industries are advancing increasingly rapidly, and striving to close the technological gap with the United States."[46] Research and development (R&D) capabilities also benefit from the heightened military spending.

Additionally, China's emerging private sector, with growing access to Western equipment, technology, and know-how, supports

the country's defense modernization efforts. According to Dr. Adam Segal of the Council on Foreign Relations, "Chinese policy makers are working to ensure that the civilian economy makes a more direct contribution to defense modernization ... dismantling many of the barriers between civilian and defense R&D ..."[47] China is particularly interested in acquiring Western civilian goods and technologies that have military applications.

But China's defense industrial base still has serious problems and faces the challenge of implementing reforms. In addition, reforms have not greatly increased competition within the defense sector, further hindering innovation and accountability. As a result, China's military modernization efforts are complicated and slowed, and the financial resources China is investing cannot be spent with optimum efficiency.

Airpower and Air Defense

The PLA Air Force, with more than 700 combat aircraft based within striking distance of Taiwan,[49] has been described as "a defensive force with offensive aspirations."[50] Beijing wants a force capable of muscling opponents further away from its shore and the vicinity of Taiwan in the event of a conflict.[51]

Newer, fourth-generation aircraft—with capabilities equivalent to current U.S. or European aircraft—constitute an increasing portion of China's air force.[52] Its military aviation industry, drawing heavily on foreign technologies, has "made more progress in improving quality and technological sophistication of aircraft in recent years than in the previous decades ... a noteworthy rate of improvement."[53] Reportedly, China's Shenyang Aircraft Industry Company and the Chengdu Aircraft Industry Company are developing advanced fourth generation fighters, including a new twin-engine fighter with stealth technology known as the J–12 expected to have many of the capabilities of the fifth-generation F/A–22.[54] These planes could be flying for the PLA Air Force by 2015.[55]

China continues to turn to Moscow for tactical, maritime, and multi-role aircraft and other aviation-related technology.[56] For example, Russia continues to supply China with fourth generation Su–30MK2 and Su–30MKK aircraft,[57] and provides to the PLA Navy advanced multi-role helicopters.[58] Beijing may also be interested in the Russian-made Tu–22M–3/ BACKFIRE bomber which could improve China's sea-denial and -control ability and allow it to target U.S. facilities on Guam, based on its reported combat radius.[59]

Mr. Cooper explained to the Commission that China is acquiring or developing aerial refueling capabilities, airborne targeting capabilities, and over-the-horizon radars.[60] It also has advanced, Russian-made SA–10 and SA–20 surface-to-air missiles on its side of the Taiwan Strait and is expected to field the Russian S–300PMU2 surface-to-air system this year.[61] The S–300PMU2 has an extended range allowing China to engage targets over Taiwan.[62] Despite these improvements and acquisitions, Cooper maintained that the PLA Air Force will not be able to project power beyond Chinese territory and the near periphery,[63] especially without the development of a strategic bomber force.

The Chinese have fielded unmanned aerial vehicles and the PLA operates them at the company and squad levels[64] to provide "additional options for long-range reconnaissance and strike [capabilities]."[65] China's special operations forces also employ unmanned aerial vehicles, or drones[66] and the PLA reportedly has a unit that monitors U.S. drones operating in Afghanistan[67] while simultaneously developing its own Predator 1-sized drones.[68]

These developments in China's air power will make it more difficult and costly for the United States to prevail over China if it intervenes in the event of a conflict between China and Taiwan, but there appear to be few other notable implications for the United States.

Ground Forces

The PLA has been downsizing its traditional ground forces while improving technology and equipment to enhance the level of unit efficiency and capability. China's ground forces number approximately 1,600,000—about 200,000 less than a year earlier and a significant decrease from 2.2 million soldiers ten years ago[69]—but still more than 70 percent of China's total military personnel. These ground forces consist primarily of 18 group armies, each with an approximate troop complement of 30,000 to 65,000.[70]

A major focus of PLA modernization is the replacement or improvement of old equipment, including improvements to the Type 59/69 tanks that comprise much of the PLA's tank force. China's Type 63 amphibious light tank has been replaced with the Type 63A that has "a significant increase in its amphibious capabilities and firepower."[71] The Type 63A has an improved turret holding a 105mm rifled tank gun, similar to those on PLA main battle tanks, which if stabilized results in a "fire on the move" capability and an increase in first-round hit probability.[72] Overall, these light tank enhancements improve the PLA's amphibious resources that are a key factor in scenarios involving conflict with Taiwan.

PLA artillery equipment includes approximately 14,000 towed artillery pieces, 1,200 self-propelled artillery units, and more than 2,400 multiple rocket launchers.[73] Beijing's 2005 International Aviation Expo unveiled the latest PLZ05 155mm self-propelled howitzer, bearing resemblance to the Russian MSTA–S 2S19 152mm model and allegedly supporting a fully automatic loading system greatly improving efficiency and reliability.[74]

The Military Balance 2006 reports that the PLA has only 421 helicopters, a relatively small number given the size of its operational forces.[75] But China's helicopter production capabilities continue to improve.[76] Reports indicate that the Changhe Aircraft Industries Group and the China Helicopter Research and Development Institute are developing a third generation, dual seat attack helicopter referred to as the WZ–10.[77] Changhe is reportedly producing another helicopter, the WZ–11, capable of carrying anti-tank missiles and rocket pods.[78]

Exemplifying the Chinese military's focus on the Taiwan Strait, the army recently increased by 25,000 (or seven percent) to 400,000 the number of troops in the three military regions opposite Taiwan—Jinan, Nanjing and Guangzhou.[79] The PLA's main training objectives appear related to amphibious operations such as the Au-

gust 2005 Peace Mission joint exercise with Russia. The amphibious component of this three-day exercise involved landing operations by 1,000 troops of the combined PLA ground, helicopter, marine, airborne, and special forces all exercising together (supported by naval and air forces), albeit in small units for short periods of time in limited areas.[80] Based on Chinese media accounts, in 2005 elements of two armored and eight infantry divisions (including both active and reserve units) and three infantry brigades participated in various levels[81] of amphibious training in the Nanjing, Guangzhou, and Jinan military regions.[82]

All these modernization steps are supportive of the PLA's overall strategy of fighting "local wars under the conditions of informationalization" by creating a more mobile, highly-trained, and responsive force. Central to this strategy, ground forces focus on training for electronic and information warfare and long-range precision strikes through joint forces cooperation.[83]

Naval Forces

It appears that China's short-term objectives for naval modernization correlate to China's goal of acquiring the ability to frustrate potential adversaries such as the U.S. Navy and deny the ability of its adversaries to operate in areas vital to China's interests such as the Taiwan Strait. Currently, China is hindered in achieving this goal by the lack of a strong, reliable fleet. The PLA Navy includes fewer than twenty ships possessing limited anti-air warfare defense systems and believed "capable of operating in an early 21st-century naval environment."[84]

China's maritime strategy relies on submarines to patrol the coastal waters, blockade the Taiwan Strait, and deter foreign navies from operating in the region in the event of a conflict.[85] Consequently, China continues to expand and improve a submarine fleet that is considered the PLA Navy's most "potent strength." China should have approximately 30 modern submarines in operation by 2007.[86] Specifically, China serially produces the *Song*-class diesel submarine and according to the Department of Defense has completed or nearly completed developing newer nuclear attack and ballistic missile submarines.[87] For example, the *Shang*-class (Type 093) nuclear attack submarine is now entering operation.[88] China is also procuring a second delivery of more modern Russian *Kilo*-class submarines.[89] (With the deployment of the newer submarines, China's *Ming*- and *Romeo*-class submarines likely will be decommissioned.[90])

China has placed a priority on modernizing its destroyer and frigate fleets and the PLA Navy's surface fleet is steadily improving, both qualitatively and quantitatively.[91] China received its first *Sovremenny II*-class destroyer from Russia, with a second expected by the end of the year.[92] Mr. Cooper predicts that by 2007 China should have more than 15 modern frigates equipped with upgraded air defense systems.[93] By 2008 the PLA Navy should be able to extend short-term sea-denial operations roughly 400 nautical miles from its shoreline.[94] The PLA Navy may be able to conduct these operations for several straight weeks by the end of the decade.[95]

Looking toward the future, China may seek to extend its naval capacities to its "greater periphery" that encompasses portions of

the Indian Ocean, the Persian Gulf, and the Strait of Malacca.[96] Should China wish to extend its naval reach westward to protect its energy-related interests in the Middle East or Africa, it would require a reliable blue-water fleet, possibly including aircraft carriers and a long-range bomber force.[97] Mr. Cooper estimates that by 2020 China could have a fleet in place to accomplish this objective.[98]

One of the presumed requirements of a blue-water fleet is one or more operational aircraft carriers. China appears interested in developing one indigenously.[99] It also recently repainted its Soviet-era *Kuznetsov*-class carrier with PLA Navy markings and refurbished its electrical systems and the flight deck.[100] Whether or not this will become China's first operational carrier remains to be seen; in any event, PLA Navy technicians use the ship to study carrier construction and design.[101]

Missiles

China continues to make significant strides in modernizing and enlarging its missile forces. Currently, there are at least ten types of ballistic missile systems that are either operational or under development.[102] China's longer-range missiles can target locations beyond the Pacific region; the CSS–4 can target portions of the continental United States.[103] In addition, Beijing continues to improve its older intercontinental ballistic missiles (ICBMs) and seeks to field increasingly mobile, accurate, and survivable, and therefore more credible, ICBMs.[104] Some of these include significant, newer systems that will become operational within the next four years, such as the DF–31 and DF–31A ICBMs as well as the sea-launched JL–2 [105] carried aboard the *Jin*-class (Type 094) submarine.[106] According to Assistant Secretary Rodman, China's newer "longer-range [missile] systems will reach many areas of the world . . . including virtually the entire continental United States."[107] Due for deployment in 2007, the DF–31A will be the first Chinese ICBM capable of hitting Washington, DC.[108]

China has an increasingly accurate and lethal short-range ballistic missile force arrayed against Taiwan that could complicate U.S. military planning and operations in the area.[109] Nearly 800 Chinese short-range ballistic missiles are stationed near Taiwan and during the past several years the number of these missiles has increased by about 100 missiles a year.[110] The newer generation missiles have greater range and accuracy.[111]

China is also making strides in the cruise missile sector. It is developing first and second generation conventionally armed land-attack cruise missiles, which eventually could be armed with nuclear payloads.[112] The PLA Navy and its Naval Air Force have obtained or are in the process of obtaining roughly a dozen types of anti-ship cruise missiles, including the Russian SS–N–22/SUNBURN and SS–N–27B/SIZZLER.[113] According to the Department of Defense, China's "pace of indigenous [anti-ship cruise missile] research, development, and production—and of foreign procurement—has accelerated over the past decade.[114] China's new *Shang*-class (Type 093) nuclear attack submarine reportedly will carry both anti-ship and land-attack cruise missiles.[115]

Just as China is working to improve its missiles, China is making significant investments in its space program. In October 2005, China conducted its second manned space mission, and plans to launch another manned mission in 2007 and a lunar robot probe by 2010.[116]

China's military space doctrine is opaque, but some experts believe that among the goals for the PLA's space program is obtaining space-related information dominance and the ability to disable its opponents' space assets in order to disrupt their space-based information and navigation systems in the event of conflict.[117] Regarding the first of these two objectives, China is working to develop advanced space-based imagery and reconnaissance systems to aid its military.[118] These capabilities will serve, as they do for the United States, as force multipliers and will make China's armed forces more competitive and lethal. With regard to the second space objective, there is evidence suggesting that China "is developing the capacity to deny ... [the use of space] to others ... [and has] at least one ground-based laser anti-satellite research and development program underway." In September 2006, U.S. officials confirmed that China, in fact, has test fired such lasers at U.S. satellites.[120] According to the Department of Defense, "Acquiring more sophisticated space systems will allow China to expand the reach of its anti-access forces and could serve as a key enabler for regional power projection.[121]

Information and Cyber-Warfare

China is actively improving its non-traditional military capabilities. Chinese military strategists write openly about exploiting the vulnerabilities created by the U.S. military's reliance on advanced technologies and an extensive C4ISR infrastructure it uses to conduct operations.[122] China's approach to exploiting the technological vulnerabilities of adversaries extends beyond destroying or crippling military targets. Chinese military writings refer to attacking key civilian targets such as financial systems.[123]

The Commission believes Chinese intelligence services are capable of doctoring computer systems. It has seen clear examples of computer network penetrations coming from China, some of which were publicized in the "Titan Rain" exposé that received substantial press coverage. In August and September 2006, attacks on computer systems of the Department of Commerce's Bureau of Industry and Security forced the Bureau to replace hundreds of computers and lock down Internet access for one month.[124]

The PLA, leveraging private sector expertise, steadily increases its focus on cyber-warfare capabilities and is making serious strides in this field.[125] According to the Department of Defense, the PLA's cyber-warfare strategy has evolved from defending its own computer networks to attacking the networks of its adversaries and limiting their ability to obtain and process information,[126] and PLA information warfare units are developing viruses to harm the computer systems of its enemies.[127] Such attacks would be intended to disable defense systems that facilitate command and control and intelligence communication and the delivery of precision weapons,[128] primary instruments for the conduct of modern U.S. warfare.

China also works to improve its own C4ISR capabilities. For example, the PLA reportedly has mobile command and control centers where commanders interact with frontline units through digital wireless and satellite communications and gather additional real-time battlefield information.[129]

Intelligence

China is hungry to acquire, adapt, and capitalize on the value of capabilities and technologies available elsewhere. Whether in the military or the commercial realm, China is willing to acquire and exploit the knowledge developed by others; it will do this legally if possible, and otherwise illegally by espionage. In this way it saves tremendous sums it otherwise would have to invest in research and development; arguably more importantly, it shrinks the amount of time necessary to transform an idea into reality.

In this effort, China has established an impressively large human intelligence apparatus that extends far beyond traditional military and national intelligence operations. For example, "... there are between 2,000 and 3,000 Chinese front companies operating in the United States to gather secret or proprietary information ..."[130] China also often requests or requires its citizens who are studying or working in places where they have access to cutting-edge research activities or to technology development and application to obtain whatever information about those activities they can obtain and provide the information to the Chinese government. This poses a very significant challenge for U.S. counterintelligence efforts. The number of Chinese exchange students and "specialty workers" entering the United States each year complicates the ability of U.S. immigration officials to track these students and workers.[131] The *Christian Science Monitor* reports that China's espionage often depends upon "relative amateurs: Chinese students and visiting scientists, plus people of Chinese heritage living in the U.S." to gather small amounts of military and economic data.[132]

Recently, several indictments of Chinese citizens for espionage have spotlighted China's spying activities in the United States. In October 2005 in California, for example, the Federal Bureau of Investigation (FBI) arrested a Chinese man (a naturalized U.S. citizen) who is an engineer for a U.S. defense firm and his wife and later arrested his brother, sister-in-law, and nephew. The FBI charged them with illegally obtaining and providing to China sensitive information related to submarine propulsion systems.[133]

China also cultivates relationships with U.S. officials in policymaking positions, illustrated by the charges filed against former Defense Intelligence Agency official Ronald Montaperto. Montaperto admitted he passed classified information to Chinese intelligence officials over a 22-year career in government, and he pled guilty to illegally retaining classified documents.[134]

SECTION 2: THE EFFECT OF U.S. AND MULTILATERAL EXPORT CONTROLS ON CHINA'S MILITARY MODERNIZATION

The Commission shall investigate and report on "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."

Key Findings

- China makes a concerted effort to modernize its military by obtaining military-related systems and technologies from other countries, particularly Russia. China uses legal and illegal means, including espionage, to obtain such technologies from the United States.
- There is only one full-time U.S. export control officer stationed in China to verify that licensed U.S. dual-use items are used in the location and for the purpose for which they are licensed. There also is only one full-time U.S. export control officer stationed in Hong Kong to verify that dual-use items licensed for use there remain in Hong Kong and are used as intended rather than being diverted, possibly to China. As a result, it is impossible to adequately oversee compliance with U.S. export licensing requirements by licensees in China or Hong Kong. This makes it easier for militarily-sensitive U.S. materials and technology to be misused or diverted without detection and without penalty to the licensees and thereby undermines the credibility of the export control process.
- China, in violation of a U.S.-China agreement, often fails to schedule timely end-use inspection visits of dual-use items licensed for export to China. This frustrates U.S. oversight of compliance with U.S. export licensing requirements by licensees in China, and makes it easier for militarily-sensitive U.S. materials and technology to be misused or diverted without detection and without penalty to the licensees and thereby undermines the credibility of the export control process.
- Export controls are likely to be substantially effective only if they are multilateral, if there are no notable sources of the controlled goods and technologies who choose to disregard the controls, and if all source nations administer and enforce the restrictions effectively. While unilateral controls may delay acquisition of controlled goods and technologies by targeted nations, those delays are unlikely to be significant if a targeted nation is intent on acquisition and if other nations possess and are willing to make available the goods and technologies.

- The memberships of most of the existing multilateral export control regimes have not agreed that China should be a target of their efforts and so do not seek to impede Chinese acquisition of the items and technologies of which they try to facilitate and coordinate control by their member nations. Not surprisingly, therefore, these regimes and their controls play no role in preventing China from acquiring items and technologies the United States believes are militarily-critical. This highlights the fact that effectively controlling the acquisition of items and technologies by a particular nation requires multilateral agreement both that possession of the items and technologies should be controlled and that the nation in question should be a target of the controls.

Concerns and Opportunities

To bolster its armed forces and their capabilities, China makes concerted efforts to obtain foreign military and military-related goods and technologies and tries to acquire these through legal and illegal means,[135] including espionage. According to former Under Secretary of Commerce for Industry and Security David McCormick, "China has a clear strategy to strengthen its military capabilities by acquiring advanced dual-use technologies [those having legitimate civilian and military uses] and incorporating them into defense systems."[136] Desired U.S. technologies include those capable of improving China's command and control, communications, computer, intelligence, surveillance, and reconnaissance (C4ISR) systems, radar systems, and maritime programs.[137] Over the past year the United States has convicted and sentenced a number of individuals for illegally exporting critical technology to China. For example, in May 2006 four naturalized U.S. citizens originally from China were sentenced in federal court for illegally exporting to Chinese state-sponsored research institutes items that are export controlled because of their military criticality, including items used in radars, smart weapons, and electronic warfare.[138]

It is in the national interest of the United States that China's military forces not be able to employ our unique, militarily-critical capabilities. Of comparable concern is the possibility that China or Chinese organizations, were they to acquire such technologies and goods, may sell or transfer them to countries of concern or to terrorists. According to a report issued by the Department of Commerce's Inspector General, "China's export control system has been criticized in the past by many western nations for its insufficiency in controlling the exports of sensitive technologies and weapons to nations of global and regional security concern."[139]

The reason for some of China's failures to control such exports is that its export control system is not well developed and fails to meet international standards, and it simply lacks the ability to effectively mandate and enforce controls. But in other cases it is apparent that China's leadership for various reasons has not desired to control the export or re-export of some items and technologies the United States believes to be militarily-critical and therefore wants to keep out of the hands of rogue nations, potential adversaries, and terrorists. Even the most effective national export con-

trol system will be effective in controlling only the export of items and technologies the nation's government *intends* to control to end-users that government does not want to receive the items and technologies. Given that China appears not to subscribe to U.S. concerns about the availability of a number of particular items and technologies the United States believes are militarily-critical, nor to some U.S. conclusions about undesirable end-users and end-uses of those items or technologies outside China, it should not be surprising that China has made no visible effort to restrain exports or re-exports of those items and technologies to those end-users and end-uses.

The challenge constantly facing the U.S. government with respect to its own export control system is to effectively prevent China and other nations of concern from acquiring militarily-critical technologies and goods with military applications while not unnecessarily interfering with or impeding U.S. businesses from engaging in profitable trade of goods and technologies determined not to pose significant security risks to the United States. For example, according to former Under Secretary McCormick, "U.S. policy should facilitate sales of American-made semiconductors to companies in China for use in stereos or a child's Game Boy [video game], but not for advanced missile systems or submarines."[140]

China presents enormous export opportunities for U.S. companies. Taking maximum advantage of such opportunities is in the interests of individual companies and their owners and workers; it also is in the national interest as we confront the historically large trade deficit with China that shows no sign of leveling off. China is the fastest growing major export market for U.S. companies[141] and U.S.-China trade reached $285 billion during 2005.[142] As a result of China's increasing market potential for U.S. exports coupled with its rapid military modernization, the Department of Commerce is reexamining its China-related export control policy. The Department currently advocates increased trade in goods and technologies with civilian end uses while at the same time further restricting trade of goods and technologies with military applications.

The Chinese government complains that current U.S. export controls are too restrictive and add to the growing trade imbalance. "We hope that the U.S. can take concrete measures to relax or lift its restrictions on high-tech exports to China, to better address the imbalances of China-U.S. trade," explained a spokeswoman for China's Foreign Ministry.[143] But Administration officials dismiss Beijing's claims that relaxed controls would significantly reduce the $201 billion U.S. trade deficit with China.[144] This argument is supported by the fact that the total value of U.S. exports to China in federal fiscal year 2005 was roughly $40 billion and the total value of denied exports—$12.5 million—was only slightly more than three-hundredths of one percent of that total value.[145]

U.S. Export Controls

Currently, the U.S. export control system involves numerous federal agencies in devising, supporting, and enforcing a complex set of regulations that covers both military goods and technologies and dual-use items.[146] During the final decade of the Cold War, the Ex-

port Administration Act of 1979 provided the legislative authority to control and license the export of dual-use items. But the Cold War ended—and with it, the U.S. security focus on the nations of the former Soviet Union and its allies. The Export Administration Act (that controlled the export of dual-use goods and technologies as differentiated from the arms or defense services—technically referred to as "munitions list" items—of which export is controlled under the Arms Export Control Act) expired in 2001, and Congressional efforts to update and reauthorize the Export Administration Act have been unsuccessful.[147] In the absence of the Export Administration Act, the executive branch maintains export controls on dual-use goods and technologies based on authority in the International Emergency Economic Powers Act, but that Act's authorities are limited, and needed modifications to the U.S. dual-use export control system cannot be made until the Export Administration Act is reauthorized.

The United States maintains an embargo on the export to China of military-use goods and technologies and it also controls the export of dual-use items to China.[148] According to the President of the Coalition For Employment Through Exports, Edmund Rice, "the U.S. [munitions list] embargo is doubtless contributing to the U.S. goal of denying Chinese access to the most advanced U.S. military technologies.[149] But China can and does obtain weapons and technology from other nations such as Russia. Of additional concern, sometimes countries to which U.S. firms are permitted to sell export-controlled, dual-use goods and technologies permit such goods or technologies to be transferred to China.[150] Mr. Rice explained to the Commission that "only Japan has any significant dual-use restrictions for China, which means China has virtually unrestricted access to U.S. dual-use technologies through procurement in third countries.[151]

Having concluded that the current U.S. dual-use export control system allows export to China of certain U.S. goods and technologies that potentially can enhance China's conventional military capabilities,[152] the Department of Commerce has worked with the Departments of Defense and State and other federal agencies to devise a new policy on dual-use export controls to China with the objective of easing certain export restrictions while increasing scrutiny of key technology exports to China that later could threaten U.S. security.[153] The current draft of this new policy requires U.S. exporters to secure a license to export some previously-uncontrolled items to China, including certain computers and electronics, whenever the exporters know or "have reason to know" the items may have a military end-use.

Improving End-Use/End-User Verification

The effectiveness of U.S. export controls depends to a large extent on the ability of the United States to verify the legitimate use of controlled technologies that were approved for export. To enhance the ability of the United States to verify the end-use and end-user of approved exports to China, the two nations signed an End Use Visit Understanding in April 2004. Despite this agreement and continued consultation over end-use visits, Beijing peri-

odically frustrates U.S. efforts to conduct end-use verification visits.[154] Pursuant to the End Use Visit Understanding, China's Ministry of Commerce schedules end-use visits requested by the U.S. export control officer stationed in Beijing. But in violation of that agreement, a majority of the visits are not scheduled for more than 60 days after the export control officer submits a visit request,[155] and any significant delay in conducting such visits affords time for misuse of a licensed item or technology in ways that could inflict damage on U.S. interests, and for concealing evidence of such misuse. Further, the Chinese Ministry of Commerce usually provides short notice to the export control officer that an end-use visit has been scheduled,[156] again increasing the difficulty of accomplishing these important visits.

In addition to these verification problems caused by the Chinese government, the frequency and number of end-use visits pertaining to approved dual-use exports to China are constrained by the fact there is only one American export control officer stationed in China. During fiscal year 2005, the Beijing-based control officer conducted 33 end-use checks.[157] But during that same period the Department of Commerce approved 1,058 applications for export to China of dual-use goods and technologies.[158] In a related matter, the Commerce Department's Inspector General's review concluded that the Department's end-use verification program in Hong Kong—that also depends on one export control officer stationed there—does not adequately monitor the potential diversions of export-controlled items to illegitimate end-uses or end-users, including end-uses and end-users in China.[159] A larger pool of export control officers from which these officials could be selected and placed more rapidly when vacancies occur in either China and Hong Kong could help reduce some of the backlog created by the Chinese.

Multilateral Export Controls

Unfortunately, U.S. export controls are not achieving their objectives as they apply to China; a major reason is that, for the most part, U.S. controls are unilateral. Of the world's leading industrial and technological nations, the only other nation that has any significant China-related dual-use export controls is Japan.[160]

There are several multilateral export control regimes. But these regimes are voluntary, and many of their member nations do not apply to exactly the same set of importing nations the export restrictions on which the members agree. Further, some regime member nations operate more effective enforcement mechanisms than do others.[161]

One multilateral regime, the Wassenaar Arrangement on Export Controls for Conventional Arms and Dual-use Goods and Technologies, aims to increase regional and global stability by encouraging member states to increase transparency surrounding their sales of arms and dual-use goods and technologies.[162] By sharing such information regarding their arms transfers, members hope to prevent the accumulation of weapons that could increase tensions or instability.[163] However, "[t]he decision to transfer or deny a transfer of any item is the sole responsibility of each Participating [member] State.[164] Therefore, discrepancies can and do emerge be-

tween the national export control policies of the member states. For example, Wassenaar members have not agreed that China should be a target of its controls, and therefore the regime does not suggest that its members should restrict exports to China of semiconductor manufacturing equipment that can be used to improve weapons systems[165]—restrictions that the United States imposes unilaterally.

After China's 1989 Tiananmen Square crackdown, the European Council, meeting in Madrid, agreed to impose an embargo on arms exports by European Union (EU) nations to China. By imposing this embargo, the Council sought to express its disapproval of China's crackdown.[166] The EU's arms embargo prohibits export to China of lethal equipment and systems. It is binding on all EU member nations, but its precise scope and coverage is vague and interpretations of its restrictions vary. As a result, some EU member nations have exported significant "nonlethal" military items and technologies to China during the embargo, including 1) military helicopters; 2) fire control radars; 3) aircraft engines; 4) submarine technology; and 5) airborne early warning systems.[167] During 2004, EU governments approved the sale of over $400 million in defense exports to China.[168]

Despite loopholes through which EU nations have exported certain technologies to China, the EU embargo coincides with and makes a substantial contribution to U.S. security interests because it complements U.S. export controls and other restrictions directed at China. Over the past few years, there have been calls by some European countries to lift the embargo, and China vigorously lobbies Brussels to repeal it. This would be a very damaging action. According to the Pentagon, lifting the embargo could "remove implicit limits on Chinese military interaction with European militaries, giving China's armed forces broad access to critical military 'software' such as management practices, operational doctrine and training, and logistics expertise."[169] In addition, repealing it would send the wrong message to Beijing about its human rights record and increase military-related exports to China, which could alter the cross-Taiwan Strait military balance.[170]

To date, the EU has retained the embargo—partly as a result of its displeasure with China's passage in March 2005 of the Anti-Secession Law authorizing use of force to prevent Taiwan from declaring independence, partly as a result of energetic diplomatic efforts by the Administration, and partly as a result of Congressional threats to enact legislation prohibiting European firms from participating in weapons systems projects with the United States or from being given access to U.S. leading-edge military technology.

The bottom line with respect to export controls is that while unilateral controls may delay acquisition of controlled goods and technologies by targeted nations, those delays are unlikely to be significant if a targeted nation is intent on acquisition and if other nations possess and are willing to provide the goods and technologies. As a corollary, export controls are likely to be substantially effective only if they are multilateral, if there are no notable sources of the controlled goods and technologies who choose to disregard the control, and if all possible source nations administer and enforce the restrictions with uniform effectiveness. While there are other

reasons a nation such as the United States may choose to impose unilateral export controls or embargos on a nation such as China, which may include a determination that such restrictions are morally necessary, no nation should do so in the belief that unilateral restrictions will significantly impede the targeted nation; that is very unlikely to be true unless the nation imposing controls is the sole source of the restricted goods and technologies.

SECTION 3: THE MILITARY BALANCE ACROSS THE TAIWAN STRAIT

> The Commission shall investigate and report on "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."

Key Findings

- The cross-Strait military balance of power currently substantially favors the mainland. China possesses advanced aircraft, submarines, surface vessels, and ballistic missiles, in greater quantities and, in many cases, equal or greater sophistication than Taiwan's. In an all-out conflict between the two, Taiwan, if relying only on its own capabilities, would be unable to prevent China from ultimately realizing its objectives.
- Taiwan is growing increasingly dependent on the threat of intervention from the United States to deter China from initiating hostile action against Taiwan, and on U.S. intervention to survive any attack or invasion China launches.
- The People's Liberation Army (PLA) Navy's surface vessel and submarine force is capable of considerably delaying the arrival of any naval force that might attempt to intervene in a Taiwan crisis and degrading its combat power. However, the lack of an integrated command, control, computer, intelligence, surveillance, and reconnaissance (C4ISR) architecture currently precludes the PLA from effective joint targeting of a carrier battle group.[171]
- There is substantial agreement among experts that a "window of vulnerability" will exist between 2008 and 2015 for U.S. forces that likely would be involved if the United States made a decision to intervene militarily in a pre-conflict China-Taiwan crisis or in a China-Taiwan conflict. Many of the Chinese modernization programs focused on Taiwan, including weapons systems such as submarines, destroyers, cruise missiles, and maneuverable ballistic missiles, and advances in C4ISR and targeting, will be deployed around or soon after 2008, while some U.S. capabilities to defeat these advances, such as ballistic missile defenses,

littoral strike assets, and an integrated anti-submarine warfare network, probably will not become operational until approximately 2015. This will decrease the deterrent effect of the possibility of U.S. intervention in a China-Taiwan conflict, and will increase the cost to the United States of intervening.

- The speed and force with which a U.S. force could respond to a Taiwan crisis will be affected by the degree to which it can secure access to bases and ports in the region. Access to such facilities in Japan, Singapore, and Philippines would be especially important.
- Despite disagreement within the Legislative Yuan, the Taiwan government is committed to its own defense and is taking measures to improve its deterrent posture. It has begun development of an indigenous surface-to-surface missile and is seeking to purchase greater numbers of F–16 fighter aircraft from the United States.

China repeatedly has made it clear that the matter of Taiwan is an extremely high priority. It considers Taiwan to be "an inalienable part of China," and steadfastly seeks to isolate Taiwan from the international community using political and economic means. The Chinese leadership also frequently reiterates its willingness to use military force against Taiwan if it perceives Taiwan to have moved too far toward independence. In March 2005, to the displeasure of much of the international community, the National People's Congress enacted the Anti-Secession Law that codified the authority China claims to use force to counter any move by Taiwan toward separation or independence. China demonstrates its seriousness on this topic by maintaining and constantly improving and expanding its military capability to threaten Taiwan with blockade, strike, or invasion in order to deter or coerce Taiwan from seeking de jure independence, which continues to be one of China's top strategic priorities. In its 2004 National Defense White Paper, the Chinese government asserts that "the separatist activities of the "Taiwan independence" forces have increasingly become the biggest immediate threat to China's sovereignty and territorial integrity as well as peace and stability in ... the Asia-Pacific region as a whole." [172]

The PLA Strategy

In seeking to prevent Taiwan from moving toward or achieving independence, the PLA has developed a number of strategies and associated capabilities that will allow it to escalate the threat or actual degree of conflict as it sees fit. In addition to the physical threat created by this buildup, a component of the strategy is to influence Taiwan's domestic politics. The first of these strategies is deterrence achieved by the threat of imposing unacceptable costs upon Taiwan. As early as the Taiwan Strait Crisis of 1995–1996,[173] the PLA's strategic missile force, the Second Artillery, has deployed steadily increasing numbers of short- and medium-range ballistic missiles in the regions opposite Taiwan primarily as a means of intimidating Taiwan's populace of 23 million. Independent consultant Mark Stokes explained in his March 2006 testimony to the Commission that "the most significant aspect of the missiles is political,

psychological, and strategic in nature . . . [Their] primary purpose is to intimidate Taiwan's population, to prevent them from taking actions deemed to be inimical to Beijing's interests."[174] However, Mr. Stokes also notes that this build up has been going on for some time and should no longer be surprising.

The acquisition and development of advanced conventional and nuclear-powered attack submarines and advanced surface vessels constitutes a second component in this deterrence strategy. The PLA Navy currently operates more than two dozen advanced submarines of indigenous and Russian origin as well as dozens of older submarines that are easier to detect by sonar, but still very capable.[175] The PLA Navy also has been modernizing its fleet of surface combatants, and introduced destroyers and frigates in five different classes during the 2005-to-2006 period.[176] The threat these pose to Taiwan's navy and to regional commercial shipping—upon which Taiwan's economy depends—is very significant.

China's increasingly capable force of maritime and air force strike aircraft is a third and final component to this deterrence strategy. Within the PLA Air Force and Navy, the ratio of newer, advanced aircraft to older, 1950s-era models is steadily increasing. Newer systems are equipped with the sensors and targeting packages capable of launching cruise missiles and precision-guided bombs against land and sea-based targets.[177]

If the threat of force fails to deter Taiwan, the PLA is prepared to escalate tensions through the employment of a blockade or "sea-denial" strategy.[178] This could range in severity from a demonstration similar to that of the 1995–1996 Strait Crisis where missiles were fired into sea areas adjacent to Taiwanese ports, to the actual sinking of commercial vessels. The objective would be to reduce or even cut entirely commercial shipping to and from Taiwan in order to sever its economic lifeline. Such action would be "very, very detrimental to Taiwan's economy . . . "[179]

Attack and invasion of Taiwan is the last and most severe strategic option for China. This scenario would most likely employ the full range of Chinese armed forces, with strikes by conventionally armed short- and medium-range ballistic missiles and by PLA Air Force and Navy aircraft, and with raids by special operations troops to "soften up" Taiwan for a full-scale amphibious and airborne assault.[180] PLA doctrine for such an operation stresses quick, decisive strikes on command and control nodes and other key facilities that would paralyze Taiwan's defenses and enable the insertion of a PLA force sufficiently large and capable to end the conflict on Beijing's terms before aid could arrive.[181]

In both the blockade and invasion scenarios, Chinese strategists believe that they will likely have to contend with U.S. intervention and perhaps that of the United States' treaty ally Japan in addition to Taiwan's own armed forces.[182] Thus the direction of much of China's military modernization has been driven by a strategy of "sea denial" to block or impede access to the immediate area surrounding Taiwan until Beijing's aims have been achieved. In his testimony to the Commission, Mr. Cortez Cooper of Hicks and Associates Inc. explains, "Beijing is focused on fielding modern destroyers, submarines, cruise missiles, and maritime strike aircraft to deter or prevent an adversary for a given period of time in or

above a critical sea lane or maritime zone of maneuver."[183] According to Mr. Cooper, China's current capabilities "could be quite effective in slowing U.S. response to a short, limited objective fight on China's periphery."[184] By 2008, China will have the capability to conduct credible short-term sea denial operations out to roughly 400 nautical miles. By 2010, it is projected it will be able to sustain such operations for a few weeks.[185]

PLA Force Modernization and Capabilities

The direction of PLA modernization has, in large measure, been driven by planning for effecting a blockade of Taiwan and an anti-access campaign. In order to counter Taiwan's armed forces, the PLA has developed a number of capabilities. The first of these is the growing short- and medium-range ballistic missile force. In his testimony before the Commission, Mr. Stokes stated, "the PRC's growing arsenal of increasingly accurate and lethal conventional ballistic and land attack cruise missiles is a central aspect of Beijing's strategy against Taiwan . . ."[186]

Since the Taiwan Strait Crisis in 1995–96, the Second Artillery has deployed a growing number of ballistic missiles across the Strait from Taiwan. Currently, the Second Artillery deploys 800 ballistic missiles opposite Taiwan in seven brigades, and is adding to this number at a rate of 100 per year.[187] However, the number of missile transporter-erector-launchers is actually a better threat indicator, as it provides "a more accurate reading of operational effectiveness in terms of raid size"—or the ability to overwhelm Taiwan's missile defense architecture.[188] The seven missile artillery brigades opposite Taiwan (out of a PLA total estimated between 16 and 19)[189] currently possess 168 to 336 reusable launchers[190] capable of reloading every 45 minutes.[191]

It is reported that the PLA may be deploying surface-to-surface land attack cruise missiles to supplement the existing ballistic missile force. China may add as many as 200 DH–10[192] land attack cruise missiles to the areas opposite Taiwan by the end of 2006.[193]

Chinese missiles also are increasingly sophisticated, accurate, and capable. There are indications that a variety of warhead options may now be available, including runway-cratering submunitions, penetration warheads for hardened targets, and fuel air explosives.[194] There are also indications that China is researching electromagnetic pulse and radio-frequency warheads.[195] The former, if detonated at the proper altitude, could knock out much or all electricity and unprotected electronic systems on the island.[196]

China is expanding its airborne heavy-lift capabilities, and is showing increased interest in existing Russian aircraft. In September 2005, China agreed to purchase 32 Ilyushin IL–76 transports to supplement its existing inventory of 20. Each of these transports can carry three of China's new airborne tanks.[197]

China is indigenously developing increasingly capable multi-role, ground attack and air superiority aircraft and is acquiring others from Russia. The J–10,[198] a multi-role indigenous aircraft in development for more than 15 years, is finally being produced in sizeable numbers.[199] It is widely speculated that the design of this air-

craft benefited from the cancelled Israeli *Lavi* program—which in turn was based, in large measure, on the U.S. F–16 design. Similarly, after even longer developmental delays, the JH–7A[200] ground attack aircraft now is being fielded to air units. Russian multi-role fighters, such as the Su–27SK/UBK, Su–30MKK, and Su–30MK2[201] equipped with anti-ship missiles and land attack cruise missiles, constitute a growing threat to Taiwan's defenses. Regarding air defense, the PLA Air Force now can threaten aircraft over Taiwan's airspace. The S–300PMU, an antiaircraft surface-to-air missile acquired from Russia and deployed opposite Taiwan, can hold all aircraft in this region at risk, "denying the Taiwan Strait as an air defense buffer zone . . ."[202]

In addition to building a force designed to neutralize Taiwan's defenses, another key driver of PLA modernization is a desire to develop capabilities to support an anti-access strategy. China's planning assumption is that U.S. forces—possibly supplemented by the Japanese—will attempt to influence the outcome of a Taiwan conflict. The need to delay such a force and deny it access to the sea and air spaces adjacent to Taiwan until Beijing's strategic or military objectives have been achieved, is a high priority in the minds of Chinese strategists.

In his testimony before the Commission in March 2006, Mr. Cooper outlined two pillars of China's anti-access strategy. The first is its submarine force. While the PLA Navy currently operates more than two dozen older, conventional submarines, such as the *Ming* and *Romeo* classes, it also possesses a matching number of more modern, quiet boats.[203] The dozen *Kilo*-class conventional attack submarines purchased from Russia (11 of which have been delivered[204]) constitute the backbone of this force.[205] The newer version is capable of firing advanced land attack and anti-ship cruise missiles, and anti-submarine warfare rockets, in addition to its normal complement of torpedoes.[206] China's indigenous construction program is building four classes of submarines—ranking it first in the world in terms of the number of different types of boats in production simultaneously.[207] In the event of conflict, locating 80 to 90 percent of only half this fleet so it can be neutralized could take weeks, leaving it able to prey on naval forces allied with Taiwan and significantly slowing the arrival their aid.[208]

The second pillar is the surface force of destroyers and frigates. Chief among these is the *Sovremmeny*–class destroyer with its supersonic anti-ship cruise missiles designed to defeat the U.S. Aegis defense system. Also in the PLA Navy's inventory are domestically-produced 052 destroyers equipped with an Aegis-like radar system and capable of providing air defense for a small squadron of ships. Looking toward the future, the PLA Navy is building eight new classes of indigenous destroyers and frigates,[209] among which is a destroyer to be equipped with a naval version of the very capable long-range S–300 air defense system.[210]

A third component of China's anti-access strategy, and one that remains more in the future, is China's C4ISR architecture. The ability to coordinate space, air, land, and sea-based assets in order to locate, track, and target the enemy is an essential component of modern warfare, the importance of which Chinese strategists understand. While China is making significant progress on develop-

ment of some individual systems, such as more advanced electro-optical and synthetic aperture radar satellites; Aegis-like air defense systems; shipborne helicopters with data links; unmanned aerial reconnaissance vehicles; over-the-horizon radars; and airborne early warning aircraft and fighters with limited airborne warning and control capability, the PLA's ability to integrate these systems remains limited and is unlikely to be achieved prior to 2012.[211] However, once this is achieved, these integrated systems will pose "a viable threat" to U.S. and Japanese command and control nodes, logistics assets, and forward deployed forces.[212]

It appears that China has not yet completed development of a ballistic missiles force capable of targeting ships at sea. However, development efforts are being pursued vigorously.[213] One of China's newest missiles under development, the DF–21C, may include a terminal guidance system, enabling it to defeat terminal missile defenses.[214] The successful deployment of this missile, and short range ballistic missiles with maneuvering re-entry vehicles, would constitute a fourth means of denying access to sea and air space surrounding Taiwan.[215]

Finally, the PLA is investing in deep-water anti-submarine warfare. This is a relatively inexpensive deterrent and provides a useful role for the older *Romeo* and *Ming*-class submarines.[216] The PLA is researching "a wide variety of applications via varied delivery and activation mechanisms," such as acoustically-activated and remote control technology.[217]

Taiwan's Armed Forces

Taiwan continues to improve its own defenses in an effort to deter possible hostile action by China and to increase its ability to resist such action. It purchases most of its weapons systems and associated military equipment from the United States. During the past five years, highly publicized squabbling between the two principal political coalitions in Taiwan has resulted in a stalemate with respect to procurement of the items in a package of defensive major weapons systems or modernization projects for current systems that the United States first proposed Taiwan purchase in 2001. Mr. Stokes told the Commission that "the most significant implication is a perception in the United States that Taiwan is not investing sufficient resources in [its] defense. This is a misperception. Taiwan's actual defense spending is $12 billion a year, not $8 billion, [or] about 3.6 percent of GDP . . .[218] [T]he fact is that Taiwan is committed to its defense."[219]

Over the last four years, Taiwan has spent $1 billion on early warning and other defensive systems in order to minimize damage from a ballistic missile attack. It has invested in large UHF radar, tactical communications hardening to preserve command and control capabilities, and rapid runway repair to prevent the grounding of its air force.[220] In August 2006, it accepted delivery of its second pair of U.S.-built, *Kidd*-class destroyers. The backbone of Taiwan's ballistic missile defense is the batteries of Patriot Advanced Capability–2 missile interceptors. Taiwan's media indicate that Taiwan's military has invested in the development of its own indigenous active terminal missile defense interceptor, possibly as an alternative

to purchase of the U.S.-upgraded Patriot Advanced Capability–3 missile.[221]

Overall, it is undeniable that Taiwan possesses a numerically inferior mix of modern and obsolete weapons systems to counter Chinese forces. Taiwan's surface vessels include *Kidd*-class destroyers, *Perry, Knox,* and *Lafayette*-class frigates and a host of minesweeping and patrol craft. Its submarine fleet is very small and consists of only two, modern *Zwaardvis*-class, and two obsolete *Guppy*-class conventional boats, useful only for training.

To defend its airspace, Taiwan's frontline fighter aircraft include fourth-generation F–16s and Mirage 2000–5s, and the Ching-kuo Indigenous Defense Fighter. These are supplemented by older, less-capable F–5s.

In addition to its ground-based UHF early warning radar, Taiwan's air force also operates a handful of E–2 Hawkeye airborne early warning aircraft purchased from the United States, which constitute the airborne component of Taiwan's C4ISR architecture tasked to locate Chinese targets and vector Taiwan's fighters to them. The U.S. has also established operational links with Taiwan to provide early warning of Chinese ballistic missile launches.[222]

In order to deter China by holding targets on the mainland at risk, Taiwan is developing its own conventional missile force, including both land attack cruise missiles and a new generation of short-range ballistic missiles.[223]

As referenced above, political infighting in Taiwan has been the principal obstacle preventing the government from taking action on the components of the package of weapons systems and system modernizations approved for purchase by the Bush Administration in April 2001. These systems include P–3C Orion anti-submarine aircraft, conventional submarines, and Patriot Advanced Capability–3 anti-ballistic missile systems.[224] Each of these systems is designed to negate existing strengths in the PLA arsenal including submarines, surface vessels, and China's conventional ballistic missile force, respectively. Taiwan officials in both party coalitions told Commissioners visiting Taipei this summer that they intend to make progress on approving some features of this package before the end of the year, but as this report is being written in October, that does not appear probable. The failure of the Legislative Yuan to take action on the April 2001 package complicates the issue of U.S. arms sales to Taiwan. This was evidenced most recently by the Bush Administration's decision in October 2006 to reject Taiwan's request for additional F–16 fighter aircraft.[225]

Could Taiwan be Overrun?

There is no consensus of expert observers on how rapidly and at what cost the PLA would be able to overcome Taiwan's defenses if China decided to launch an all-out assault. However, there certainly is a consensus that the military balance between the two tilts substantially toward the mainland.[226] Most experts also agree that while an assault would likely prove very costly for the mainland, China probably could achieve the strategic objective of political capitulation by Taiwan if the conflict were limited to the forces of China and Taiwan. This makes the question of whether the

United States, and possibly Japan, might intervene in a China-Taiwan conflict—and how, how vigorously, and how rapidly they would engage—of paramount importance in trying to predict the outcome.

Comparison of Chinese and U.S. Armed Forces

Chinese strategists believe that the United States is likely to respond militarily on Taiwan's side in a China-Taiwan conflict. They believe that in such a case, one or more U.S. carrier battle groups might try to shield Taiwan from the Chinese attack and deprive the Chinese forces of the ability to achieve their objectives. Chinese strategists also understand that China does not possess the resources to compete with the United States in a force-on-force arms race.[227] Hence, in the short-term, they are focused primarily on one strategy—sea-denial—and developing capabilities that support this strategy. Ballistic missiles with terminal guidance, surface vessels with supersonic anti-ship cruise missiles, and attack submarines capable of launching cruise missiles while submerged constitute several layers of counter-carrier capability and would significantly affect the speed with which the United States could respond in a crisis.[228] Regarding the PLA Navy's submarine force, Mr. Cooper told the Commission, "In a protracted head-to-head fight [with the U.S. Navy], the PLA would lose these submarines; but they could be quite effective in slowing U.S. response to a short, limited objective fight on China's periphery."

However, the PLA is still bound by significant limitations, principally in the areas of anti-submarine warfare[229] and C4ISR integration. The PLA is attempting to remedy its C4ISR shortfall by developing indigenous and procuring foreign systems, but it currently lacks the architecture and systems integration required for precision strikes necessary to attack and sink an aircraft carrier.[230]

If the PLA can sustain its pace of modernization, in the next decade it is likely to introduce greater numbers of quieter, more lethal nuclear submarines, and conventional submarines equipped with air-independent propulsion allowing for longer submergence; more advanced fighter, ground-attack, airborne early warning, air-to-air refueling, and heavy lift aircraft; ballistic missiles with terminal guidance; and perhaps one or two aircraft carriers[231] or air capable ships.[232] The PLA also is likely to improve its deep-water anti-submarine mining capabilities and perhaps acquire strategic bombers from Russia.[233] Significantly, the PLA also is likely to develop and operationalize an integrated C4ISR architecture capable of joint targeting.

U.S. armed forces arguably are the best equipped in the world by most measures. The Aegis radar air defense system on U.S. surface vessels, *Seawolf*- and *Virginia*-class nuclear submarines, space-based assets, and airborne early warning aircraft, among other systems, continue to be "the gold standard" in their respective categories. U.S. joint targeting and precision-strike capabilities are unmatched, made possible by an integrated C4ISR architecture connecting aircraft, ships, satellites, and ground forces through a variety of data links.

U.S. armed forces are seeking to develop and implement enhanced littoral operations, effective theater ballistic missile defense capability, an integrated anti-submarine network, and cutting edge air superiority and ground attack aircraft. For example, the introduction of the littoral combat ship and the *Zumwalt*-class DDG1000 will provide the U.S. Navy with a stealthy force capable of sophisticated anti-submarine warfare and fire-support operations. Fielding the F/A–22 air superiority fighter and the F–35 Joint Strike Fighter, with their stealth, range, and maneuverability, will substantially increase the lethality of air and ground attack operations.

The trends in both Chinese and U.S. armed forces weapons and ancillary systems development and the projected deployment dates for these systems reveal a window of vulnerability[234] for the United States between 2008 and 2015. Many Chinese modernization programs focused on Taiwan, such as submarines, destroyers, and cruise and maneuverable ballistic missiles, will be deployed around 2008, while some U.S. capabilities to defeat a Chinese anti-access strategy, such as ballistic missile defenses, littoral strike assets, and an integrated anti-submarine warfare network, may not be ready for deployment until 2015.[235]

RECOMMENDATIONS

China's Military Modernization

- The Commission recommends that Congress direct the Administration to engage in a strategic dialogue with China on the importance of space surveillance, the military use of space, and space weapons. Such a dialogue should include strategic warning and verification measures.
- The Commission recommends that Congress instruct the Director of National Intelligence, working with the Department of Defense, to formulate and establish a more effective program for assessing the nature, extent, and strategic and tactical implications of China's military modernization and development.
- The Commission recommends that Congress require the Department of Defense to include in its annual report to Congress on China's military power an assessment of U.S. weapons systems, force structure, basing, doctrine, and tactics in order to maintain a favorable balance of military power in the region and to ensure U.S. forces will prevail as rapidly and effectively as possible in the event of a conflict with the Chinese military over Taiwan or other interests in the Asia-Pacific region.

U.S. Export Controls

- The Commission recommends that Congress enact a new Export Administration Act to clarify U.S. export control policy and the U.S. approach to multilateral export control regimes. The new legislation should take into account new and emerging national security threats, unique U.S. technological advances, and global trade developments since the expired Export Administration Act was enacted in 1979. It also should establish strengthened penalties against violators.

- The Commission further recommends that Congress encourage the Administration, as it reviews U.S. export controls aimed at China, to engage in substantive discussions with U.S. companies and business groups with the objective of avoiding the imposition of unnecessary export burdens that do not appreciably enhance U.S. security interests.
- The Commission recommends that Congress urge the Administration to engage in more vigorous diplomatic activity at high levels in order to obtain multilateral cooperation necessary for effective global export controls.
- The Commission recommends that Congress provide adequate funding to support an increase in the number of initial and periodic follow-up end-use/end-user verification visits for exports licensed to China and Hong Kong. This should include increasing the number of qualified, Mandarin-speaking export control officers stationed in China and Hong Kong.
- The Commission recommends that Congress encourage the Administration to discuss with key allies the establishment of a multilateral arrangement to ensure post-shipment verification of the status of certain sensitive technologies exported to China.

Military Balance Across the Taiwan Strait

- The Commission recommends that Congress urge the Administration to encourage Taiwan's Legislative Yuan to approve the purchase of the remaining components of the arms package offered by the United States in April 2001, or alternative systems that will enhance Taiwan's defense capability, and that additional arms requests from Taiwan be considered by the U.S. government on their merits.

Protection of Government Computers from Espionage

- The Commission recommends that Congress examine the federal procurement process to ensure that all agencies consider security measures when purchasing computers.

ENDNOTES

1. U.S. Department of Defense, *Quadrennial Defense Review Report,* (Washington, DC: February 6, 2006), p. 29.
2. U.S. Department of Defense, *Quadrennial Defense Review Report,* (Washington, DC: February 6, 2006), p. 29. Assistant Secretary of Defense Peter Rodman explained to the Commission that China's modernization effort "has implications not only for the military balance in the Taiwan Strait, but for the balance in the Asia-Pacific region as well." U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Peter Rodman, March 16, 2006,.
3. China uses the term "People's Liberation Army" to refer to its combined Army, Navy, Air Force and Strategic Rocket Forces. For the purposes of this section, the terms "ground forces or Army," "Navy," "Air Force," or "Second Artillery", respectively, will be used to distinguish single service branches from the entire armed forces.
4. House Armed Services Committee, *Hearing on the Military Power of the People's Republic of China,* testimony of Peter Rodman, June 22, 2006.
5. U.S. Department of Defense, *Annual Report to Congress on the Military Power of the People's Republic of China,* (Washington, DC: May 2006), p. 1.
6. U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Peter Rodman, March 16, 2006.

7. Taiwan Relations Act, Public Law 98–6, 96th Congress, (April 10, 1979), Sec. 2 (5) (6).

8. U.S. Department of Defense, *Annual Report to Congress on the Military Power of the People's Republic of China,* (Washington, DC: May 2006), p. 37.

9. U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Cortez Cooper, March 16, 2006.

10. Eric McVadon, "China's Maturing Navy," *Naval War College Review,* vol. 59, no. 2 (Spring 2006).

11. U.S. Department of Defense, *Annual Report to Congress on the Military Power of the People's Republic of China,* (Washington, DC: May 2006), p. 11.

12. U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Peter Rodman, March 16, 2006.

13. U.S. Department of Defense, *Annual Report to Congress on the Military Power of the People's Republic of China,* (Washington, DC: May 2006), p. 7.

14. "Increased dependence on overseas resources will bring Beijing to require a greater effort by Chinese naval forces to protect the trade flows and show the flag in ports of countries that are considered important trading partners." Giuseppe Anzera, "The Modernization of the Chinese Navy," *Power and Interest News Report,* September 12, 2005. See also U.S. Department of Defense, *Annual Report to Congress on the Military Power of the People's Republic of China,* (Washington, DC: May 2006), p. 15.

15. U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Cortez Cooper, March 16, 2006.

16. "In the near term, Beijing's efforts to build a navy able to satisfy. . .maritime security concerns focus on Taiwan; in the mid-term, they include the disputes with Japan over natural gas deposits in the East China Seabed and with the claimants to South China Sea territories." National Defense University, *Conference on China's Global Activism: Implications for U.S. Security Interests,* remarks of Bernard Cole, June 20, 2006, p. 3.

17. Quote from Quadrennial Defense Review cited in U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Peter Rodman, March 16, 2006.

18. U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Peter Rodman, March 16, 2006.

19. U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Peter Rodman, March 16, 2006.

20. High level U.S. Government officials continually have urged Beijing to be more transparent in its military activities. For example, when meeting with senior Asia-Pacific defense officials earlier this year in Singapore, Secretary of Defense Donald Rumsfeld noted that "there are aspects of China's actions that can complicate their relationships with other nations. The lack of transparency with respect to their military investments understandably causes concerns for some of its neighbors." Ralph Cossa, "A Sublter China Policy?," *The International Herald Tribune,* June 9, 2006, p. 7. In March 2006, Secretary of State Condoleezza Rice expressed concern over China's military modernization and said, "We've told the Chinese that they need to be transparent about what their military buildup means." David Gollust, "Rice Urges Chinese Transparency on Defense Plans," *The Voice of America News,* March 16, 2006.

21. U.S. Department of Defense, *Annual Report to Congress on the Military Power of the People's Republic of China,* (Washington, DC: May 2006), p. I.

22. U.S. Department of Defense, *Annual Report to Congress on the Military Power of the People's Republic of China,* (Washington, DC: May 2006), p. I.

23. U.S. Department of Defense, *Annual Report to Congress on the Military Power of the People's Republic of China,* (Washington, DC: May 2006), p. 14.

24. U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Jacqueline Newmyer, March 16, 2006.

25. U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Jacqueline Newmyer, March 16, 2006.

26. U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Peter Rodman, March 16, 2006.

27. For more on military-to-military contacts, see Shirley A. Kan, *U.S.-China Military Contacts: Issues for Congress,* (Congressional Research Service, Washington, DC: June 30, 2006).

28. Edward Cody, "U.S. Aims to Improve Military Ties With China," *The Washington* May 16, 2006, p. A–14.

29. House Armed Services Committee, *Hearing on The Military Power of the People's Republic of China,* testimony of Peter Rodman, June 22, 2006.

30. Edward Cody, "U.S. Aims to Improve Military Ties With China," *The Washington Post,* May 16, 2006, p. A–14.

31. "China, U.S. Hold Military Talks Following Heated Exchanges," *Agence France-Presse,* June 9, 2006.

32. Rear Admiral Zhang Leiyu led the Chinese delegation and said "The visit helped China obtain a better understanding of U.S. weapons, training, skills and exercise arrangements." Christopher Bodeen, "Chinese Officers Claim Appreciation of U.S. Weapons and Tactics From Wargames Observation," *Associated Press,* June 22, 2006.

33. Shirley A. Kan, *U.S.-China Military Contacts: Issues for Congress,* (Congressional Research Service, Washington, DC: June 30, 2006), p. 61.

34. "China, US agree to further military coop," *China Daily,* July 19, 2006. www.chinadaily.com.cn/china/2006–07/19/content_644838.htm.

35. Shirley A. Kan, *U.S.-China Military Contacts: Issues for Congress,* (Congressional Research Service, Washington, DC: June 30, 2006), pp. 17–18.

36. "China Launches 'North Sword 2005 War Exercises," *Renmin Ribao (People's Daily),* September 28, 2005.

37. International Institute for Strategic Studies, *The Military Balance, 2005–2006,* (Routledge, London: 2006), p. 249. See also "China's Defense Budget to Increase 14.7% in 2006," *Xinhua,* March 5, 2006. english.people.com.cn/200603/05/eng20060305_247883.html. See also U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Peter Rodman, March 16, 2006. U.S. dollar amount based upon an exchange rate of 8 RMB = $1.

38. International Institute for Strategic Studies, *The Military Balance, 2005–2006,* (Routledge, London: 2006), p. 252.

39. U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Peter Rodman, March 16, 2006.

40. U.S. Department of Defense, *Annual Report to Congress on the Military Power of the People's Republic of China,* (Washington, DC: May 2006), p. 20. The Report also notes that "[w]hile the United States has long urged China to increase transparency in reporting military budgets and expenditures, to date Beijing has only provided a highly aggregated breakout of maintenance and operations, personnel, and equipment roughly defined as equal shares in its Defense White Papers."

41. "China's leaders and strategists do not like being dependent on other countries for their defense modernization needs. They have made it clear that their long-term goal is to return to the first path — "self-reliance" in defense production." Keith Crane, et al., *Modernizing China's Military—Opportunities and Constraints,* (RAND Corporation, Santa Monica, CA: 2005), p. 137.

42. Evan Medeiros, et al., *A New Direction for China's Defense Industry,* (RAND Corporation, Santa Monica, CA: 2005), p. xvi.

43. Evan Medeiros, et al., *A New Direction for China's Defense Industry,* (RAND Corporation, Santa Monica, CA: 2005), p. xvii.

44. U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Richard Bitzinger, March 16, 2006.

45. U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Roger Cliff, March 16, 2006.

46. U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Roger Cliff, March 16, 2006.

47. U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Adam Segal, March 16, 2006.

48. Cheung Tai Ming, "Chinese Defense Industrial Reform and the Navy," *The Jamestown Foundation China Brief,* February 25, 2005. See also U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Roger Cliff, March 16, 2006.

49. U.S. Department of Defense, *Annual Report to Congress on the Military Power of the People's Republic of China,* (Washington, DC: May 2006), p. 4.

50. U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Cortez Cooper, March 16, 2006.

51. U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Cortez Cooper, March 16, 2006. See also U.S. Department of Defense, *Annual Report to Congress on the Military Power of the People's Republic of China,* (Washington, DC: May 2006), p. 30—"The PLA has shifted from point defense of key military, industrial, and political targets to a new Joint Anti-Air Raid Campaign doctrine based on a modern, integrated air defense system capable of effective offensive counter-air (OCA) and defensive counter-air (DCA). Under this doctrine, the PLA will use aircraft, surface-to-air missiles, long-range artillery, special operations forces, naval forces, and guerrilla units to destroy and enemy's ability to conduct offensive air operations and provide defense of PRC airspace."

52. U.S. Department of Defense, *Annual Report to Congress on the Military Power of the People's Republic of China,* (Washington, DC: May 2006), p. 4.

53. Keith Crane, et al., *Modernizing China's Military — Opportunities and Constraints,* (RAND Corporation, Santa Monica, CA: 2005), p. 176.

54. "J–XX 4th Generation Fighter Aircraft," *Chinese Defence Today,* updated June 2, 2006. www.sinodefence.com/airforce/fighter/jxx.asp. See also U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Richard Fisher, March 16, 2006.

55. "J–XX 4th Generation Fighter Aircraft," *Chinese Defence Today,* updated June 2, 2006. www.sinodefence.com/airforce/fighter/jxx.asp.

56. U.S. Department of Defense, *Annual Report to Congress on the Military Power of the People's Republic of China,* (Washington, DC: May 2006), p. 4.

57. U.S. Department of Defense, *Annual Report to Congress on the Military Power of the People's Republic of China,* (Washington, DC: May 2006), p. 4. In October 2006, Russian sources confirmed negotiations over China's purchase of Su–33 aircraft. This aircraft is similar to the Su–27 but configured for carrier operations. See "China to Buy Su–33 Fighter from Russia," *Chinese Defence Today,* updated October 24, 2005. www.sinodefence.com/news/2006/news06–10–24.asp.

58. U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Bernard Cole, March 16, 2006.

59. U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Cortez Cooper, March 16, 2006.

60. U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Cortez Cooper, March 16, 2006.

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66. U.S. Department of Defense, *Annual Report to Congress on the Military Power of the People's Republic of China,* (Washington, DC: May 2006), p. 16.

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68. "Jane's World Armies: China," *Jane's Online,* updated June 14, 2006. www.janes.com.arugula.cc.columbia.edu.

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70. International Institute for Strategic Studies, *the Military Balance, 2005–2006,* (Routledge, London: 2006), p. 265. See also Dennis J. Blasko, "Chinese Army Modernization: An Overview," *Military Review,* September-October 2005, p. 70.

71. Christopher F. Foss, "China upgrades WZ 501 infantry fighting vehicle," *Jane's Defense Weekly,* July 19, 2005, p. 32.

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81. PLA amphibious training levels vary significantly between units. While amphibious mechanized infantry divisions are capable of sophisticated maneuvers, other units must concentrate on basic anti–sea sickness, loading and unloading drills.

82. Dennis Blasko, "PLA Ground Force Modernization Underway in All Military Regions; Preparing for a Variety of Missions," *Exploring the 'Right Size' for China's Military: PLA Missions, Functions and Organization,* presented at the PLA Conference, at the U.S. Army War College, Carlisle, PA., October 6–8, 2006. Sponsored by The National Bureau of Asian Research and the U.S. Army War College Strategic Studies Institute.

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91. U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Cortez Cooper, March 16, 2006. See also National Defense University, *Conference on China's Global Activism: Implications for U.S. Security Interests,* remarks of Bernard Cole, June 20, 2006, p. 8 and Giuseppe Anzera, "The Modernization of the Chinese Navy," *Power and Interest News Report,* September 12, 2005— "This strengthening of [China's naval] forces will constitute a notable improvement in the performance of China's high sea forces . . . This emerging situation [of China's naval modernization] can suggest some foreign policy scenarios related to Beijing's move in the next years."

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100. U.S. Department of Defense, *Annual Report to Congress on the Military Power of the People's Republic of China,* (Washington, DC: May 2006), p. 32.

101. U.S. Department of Defense, *Annual Report to Congress on the Military Power of the People's Republic of China,* (Washington, DC: May 2006), p. 32.

102. House Armed Services Committee, *Hearing on The Military Power of the People's Republic of China,* testimony of Peter Rodman, June 22, 2006.

103. House Armed Services Committee, *Hearing on The Military Power of the People's Republic of China,* testimony of Peter Rodman, June 22, 2006. See also U.S. Department of Defense, *Annual Report to Congress on the Military Power of the People's Republic of China,* (Washington, DC: May 2006), pp. 26–27 and U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Peter Rodman, March 16, 2006.

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117. *China's Space Program — Civilian, Commercial, & Military Aspects,* (CNA Conference Report, Alexandria, VA: May 2006), pp. 11–12.

118. U.S. Department of Defense, *Annual Report to Congress on the Military Power of the People's Republic of China,* (Washington, DC: May 2006), p. 33.

119. U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Peter Rodman, March 16, 2006.

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126. U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Peter Rodman, March 16, 2006. See also U.S. Department of Defense, *Annual Report to Congress on the Military Power of the People's Republic of China,* (Washington, DC: May 2006), pp. 35–36.

127. U.S. Department of Defense, *Annual Report to Congress on the Military Power of the People's Republic of China,* (Washington, DC: May 2006), p. 36.

128. Dawn S. Onley and Patience Wait, "Red Storm Rising," *Government Computer News,* August 21, 2006.

129. "Mobile Command Post," *Chinese Defence Today,* updated May 10, 2006. www.sinodefence.com/c4i/c4isr/mobilecommand.asp.

130. Subcommittee on Immigration, Border Security and Claims, House of Representatives, *Continuation of Unclassified Portion of Oversight Hearing on: "Sources and Methods of Foreign Nationals Engaged in Economic and Military Espionage,"* testimony of Larry M. Wortzel, September 15, 2005.

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137. U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls*, testimony of Darryl Jackson, March 17, 2006.

138. U.S. Department of Justice, *Four Owners/Operators of New Jersey Company Sentenced For Illegally Selling National-Security Sensitive Items to Chinese Interests*, (Washington, DC: May 1, 2006). www.bis.doc.gov/news/2006/DOJ05_01_06.htm.

139. U.S. Department of Commerce, Office of Inspector General, *U.S. Dual-Use Export Controls for China Need to Be Strengthened*, (Washington, DC: March 2006), p. 1. See also U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls*, testimony of Beth McCormick, March 17, 2006.—"Thus, our concern is manifest in the potential of U.S. or Western technologies that could migrate to these [problematic] regimes via Chinese entities. This poses one of our most significant policy challenges with respect to China."

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153. Center for Strategic and International Studies, *Discussion on-Win High Technology Trade With China*, remarks of Under Secretary of Commerce David McCormick, June 9, 2006, p. 4. www.bis.doc.gov/News/2006/McCormick06-9-06.htm.

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168. U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls*, testimony of Francis Record, March 17, 2006.

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170. U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls*, testimony of Francis Record, March 17, 2006.

171. For more information on Chinese use of network-centric warfare to attack carrier battle groups, see Zhang Kaide and Zhao Shubin, "shimin Daji Zhihui Kongzhi Jishu Chutan" *("The Command and Control Technology of Time Critical Strikes"), Zhihui Kongzhi yu Fangzhen (Command and Control Simulation)* 28, No. 2 (April 2006), pp. 1–5. See also Nie Yubao, "Daji Haishang Di Da Jian Jianting Biandui de Dianzi Zhan Zhanfa" ("Current Methods for Electronic Warfare Attacks on Heavily Fortified Naval Formations"), *Wo Jun Xinxi Zhan Wenti Yanjiu (Research on Questions about Information Warfare),* (National Defense University Press, Beijing: 1999).

172. State Council Information Office, *China's National Defense in 2004,* (People's Republic of China: 2004), p. 3.

173. U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Mark Stokes, March 16, 2006.

174. U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Mark Stokes, March 16, 2006.

175. U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Cortez Cooper, March 16, 2006.

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class of destroyer, the Type 051C *Luzhou,* has been launched and is expected to enter service by the end of 2006. See Ronald O'Rourke, *China Naval Modernization: Implications for U.S. Naval Capabilities—Background and Issues for Congress,* (Congressional Research Service, Washington DC: November 18, 2005). See also "Naval Ships," *Chinese Defence Today,* October 26, 2006. www.sinodefence.com/navy/default.asp.

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181. U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Cortez Cooper, March 16, 2006.

182. U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Cortez Cooper, March 16, 2006.

183. U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Cortez Cooper, March 16, 2006.

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186. U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Mark Stokes, March 16, 2006.

187. House Armed Services Committee, *Hearing on The Military Power of the People's Republic of China,* testimony of Peter Rodman, June 22, 2006.

188. U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Mark Stokes, March 16, 2006.

189. Kenneth Allen and Maryanne Kivlehan-Wise, "Implementing PLA Second Artillery Doctrine Reforms," *China's Revolution in Doctrinal Affairs: Emerging Trends in the Operational Art of the Chinese People's Liberation Army,* (Center for Naval Analyses, Alexandria, VA: November 2005), p. 175.

190. U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Mark Stokes, March 16, 2006.

191. Kenneth Allen and Maryanne Kivlehan-Wise, "Implementing PLA Second Artillery Doctrine Reforms," *China's Revolution in Doctrinal Affairs: Emerging Trends in the Operational Art of the Chinese People's Liberation Army,* (Center for Naval Analyses, Alexandria, VA: November 2005), p. 159.

192. The Donghai–10 (DH–10) is a ground-launched, second generation land attack cruise missile with a range of more than 1,500 km. Its guidance system permits a circular error probable of 10 meters. See Wendell Minnick, "China Tests New Land-Attack Cruise Missile," *Jane's Missiles and Rockets,* September 21, 2004.

193. U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Mark Stokes, March 16, 2006.

194. U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Mark Stokes, March 16, 2006.

195. U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Mark Stokes, March 16, 2006.

196. U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Mark Stokes, March 16, 2006.

197. U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Richard Fisher, March 16, 2006.

198. The Jian–10 (J–10) is an advanced, multi-role fighter aircraft reported to be similar in weight and performance to the Eurofighter Typhoon or Dassault Rafale. See U.S. Department of Defense, *Annual Report to Congress on the Military Power of the People's Republic of China,* (Washington, DC: May 2006), p. 4.

199. U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Richard Fisher, March 16, 2006.

200. The JianHong–7A (JH–7A) is a ground-attack aircraft similar to the Vietnam-era MiG–21 Fishbed in terms of performance, but with upgraded avionics and weapons systems. See Ronald O'Rourke, *China Naval Modernization: Implications for U.S. Naval Capabilities—Background and Issues for Congress,* (Congressional Research Service, Washington DC: November 18, 2005), p. 66.

201. The roughly 400 Sukhoi aircraft purchased from Russia constitute the most lethal component of China's air force. The Su–27SK/UBK (also known as the "Jian–11" [J–11] for those versions built under license by China) has performance capabilities thought to equal or surpass those of the F–15C. See *Chinese Defence Today,* October 19, 2006. www.sinodefence.com/airforce/fighter/su27.asp. The Su–30 is an improved, multi-role version of the Su–27 and is considered roughly comparable to the US Air Force F–15E Strike Eagle in terms of performance and capability. The "MKK" designation denotes this model as modified for export to China. The maritime version of this aircraft, the Su–30MK2, is equipped to carry the Kh–31A supersonic anti-ship missile and is capable of tasking and controlling up to 10 other aircraft through a common communications net. See *Chinese Defence Today,* October 19, 2006. www.sinodefence.com/airforce/fighter/su30.asp.

202. U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Richard Fisher, March 16, 2006.

203. U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Cortez Cooper, March 16, 2006.

204. "Project 877EKM/636 Kilo Class Diesel-Electric Submarine," *Chinese Defence Today,* updated December 25, 2005. www.sinodefence.com/navy/sub/kilo.asp.

205. U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Cortez Cooper, March 16, 2006.

206. U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Cortez Cooper, March 16, 2006.

207. The Heritage Foundation, *A New Look at China's Military,* (Washington, DC: June 7, 2006).

208. U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Bernard Cole, March 16, 2006.

209. U.S.-China Economic and Security Review Commission, Hearing on China's Military Modernization and U.S. Export Controls, testimony of Cortez Cooper, March 16, 2006.

210. "Type 051C (Luzhou Class) Guided Missile Destroyer," *Chinese Defence Today,* updated June 18, 2006. www.sinodefence.com/navy/surface/type051cluzhou.asp.

211. U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Cortez Cooper, March 16, 2006.

212. U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Cortez Cooper, March 16, 2006.

213. U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Cortez Cooper, March 16, 2006. See also, Ted Parsons, "China Develops Anti-ship Missile," *Jane's Defence Weekly,* January 18, 2006.

214. U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Mark Stokes, March 16, 2006.
215. U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Mark Stokes, March 16, 2006.
216. U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Cortez Cooper, March 16, 2006.
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219. U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Mark Stokes, March 16, 2006.
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222. U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Mark Stokes, March 16, 2006.
223. U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Mark Stokes, March 16, 2006.
224. "Taiwan Takes Delivery of Last Two of Four Destroyers," *Deutsche Presse-Agentur,* August 25, 2006.
225. Richard Dobson, "U.S. Suspends F–16 Sale to Taiwan over Budget Delay," *Reuters,* October 3, 2006.
226. U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Richard Fisher, March 16, 2006.
227. U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Cortez Cooper, March 16, 2006.
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234. U.S.-China Economic and Security Review Commission, *Hearing on China's Military Modernization and U.S. Export Controls,* testimony of Cortez Cooper, March 16, 2006.
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CHAPTER 4

A CASE STUDY OF THE AUTOMOTIVE INDUSTRY THAT ILLUSTRATES CHALLENGES TO U.S. MANUFACTURING AND THE U.S. DEFENSE INDUSTRIAL BASE

The Commission shall investigate and report on—

"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."

"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."

"WORLD TRADE ORGANIZATION COMPLIANCE—The compliance of the People's Republic of China with its accession agreement to the world Trade Organization (WTO)."

Key Findings

- China's automobile production capacity already exceeds domestic demand by 10 percent to 20 percent.[1] This overcapacity is projected to grow to 8 million vehicles by 2010 and it is very likely that China will begin exporting vehicles to the United States within the next five to ten years. Chinese industrial subsidies, undervaluation of China's currency, discriminatory tariff rates, tax breaks, and a host of other unfair trade practices will make the price of Chinese vehicle imports artificially low in foreign markets. The U.S. auto industry will find it difficult to compete with unfairly-priced imports and likely will lose an additional share of the domestic market.
- Serious intellectual property violations by Chinese companies are harming U.S. consumers and American manufacturers. Auto parts are being counterfeited, intentionally misrepresented, and sold as genuine—all in direct violation of both China's trademark laws, which clearly are not being enforced, and China's World

Trade Organization (WTO) obligations. American citizens are being put at risk as inferior Chinese counterfeit auto parts find their way under the hoods of vehicles driven on our streets, while U.S. companies lose significant market share and brand reputation to such counterfeit goods.

- Chinese regulations currently require automakers to exceed a 40 percent domestic content requirement or face higher tariffs on the imported auto parts. These discriminatory tariffs pressure China-based auto assembly companies to use parts manufactured in China rather than U.S.-manufactured parts. This violates the promises China made, and the legal obligations it assumed, as part of its accession to the WTO. These regulations are intended to force U.S. and other manufacturers to shift parts production to China, resulting in U.S. manufacturers losing business and U.S. workers losing jobs.
- China's WTO-illegal trade practices are serving to hollow out the U.S. manufacturing base. The loss of America's sophisticated manufacturing capabilities has serious national security implications. As the U.S. manufacturing base diminishes, the U.S. military risks losing its ability to easily, quickly, and reliably procure much-needed weapons systems, components, and spare parts. With a smaller industrial base to draw from, military leaders are increasingly concerned about maintaining warfare capabilities, especially in the event of actions not supported by the People's Republic of China.
- As the U.S. defense establishment becomes increasingly reliant on the private sector for commercial off-the-shelf parts and components, the military risks losing control of its supply chain.
- The problems with which American car makers and parts manufacturers are struggling exemplify the challenges that the U.S. industrial base faces as China expands its industrial prowess and continues to utilize unfair trade advantages.

Overview

Within little more than a decade, China has gone from nearly banning the private ownership of cars to directing huge investments into vehicle production by state-owned auto manufacturers. In 2005 China produced nearly five times as many motor vehicles as it had produced annually in the 1990's.[2] In 2002 and 2003 alone, the growth rate for auto sales exceeded 60 percent.[3] China now stands as the second largest market for vehicle sales and the third largest vehicle producer in the world.

U.S. auto assembly companies and parts manufacturers alike view China with a mixture of enthusiasm and alarm. Businesses see enormous opportunities in the growing automobile market and the low-cost manufacturing base that China has to offer. They also face a host of unfair trade practices that are seriously affecting the ability of American manufacturers to compete on a level playing field. The Commission held a hearing in Dearborn, Michigan in July 2006 to examine how the rise of China's auto and auto-parts industries is affecting the U.S. industrial base, with a particular focus on the implications for American workers, investors, companies, and national security.

The Commission chose to study the U.S. auto and auto parts industries because of the significant impact these industries have on the wider American industrial base. Many of the problems and issues the auto and auto parts sectors face are symptomatic of the overall issues confronting America's industrial economy.

China's Auto and Auto Parts Strategy

Since China's accession to the WTO, the Chinese government has placed a growing emphasis on developing world-class auto and auto-parts industries. Beijing views the creation of these industries as a fundamental step in achieving the technologically advanced industrial base it seeks to develop. The Chinese Communist Party has designated the auto industry as a "pillar industry" and has formulated a number of strategies to accelerate its development. As the Chinese government begins to recognize that a strong automobile industry plays an important role in industrial development, the U.S. auto sector is declining.

China's tenth Five-Year Plan, adopted in 2001, stressed the importance of establishing joint ventures among Chinese and foreign auto manufacturers and suppliers in order to develop business and technology transfer opportunities.[4] As foreign companies grew reluctant to share core technologies with their Chinese partners due to China's rampant IPR violations, the Chinese government and Chinese companies began using four other key tactics: 1) purchasing companies with certain desired expertise in complex manufacturing, 2) hiring engineering services firms to obtain key knowledge of product development and new technology, 3) co-developing new products with foreign partners, and 4) collaborating with major global suppliers willing to supply crucial components and systems for indigenously manufactured vehicles.[5]

The latest Five-Year Plan—the eleventh—adopted in 2006, identifies Chinese manufacturing skills as an area that requires additional state support. Specifically, this Plan states:

> *Upgrade the Auto Industry: Enhance the auto industry's ability for independent innovation; accelerate the development of auto engines; auto electronics; and key assemblies and parts that possess independent intellectual property. Give play to the role of mainstay enterprise in increasing the market share of proprietary passenger cars . . . Guide enterprise to merge and reorganize during the course of competition so as to form enterprise capable of producing 1 million automobiles each year.*[6]

According to Bruce Belzowski, Senior Researcher from the University of Michigan's Office for the Study of Automotive Transportation, "The Chinese do not seem to be focused on internal expansion of the industrial sector, but instead see structural upgrades as the goal for the next five years."[7] The auto industry is seen as a main driver of technological innovation.

Other auto-related objectives of the current Five-Year Plan include, "developing indigenous technological innovation capabilities and self-controlled intellectual property; reducing overcapacity and overheated investment; and encouraging energy efficient vehicle

technology," according to John Moavenzedah, Executive Director of the MIT International Motor Vehicle Program.[8]

The importance that China places on its vehicle industry is also evident in the 2004 National Development and Reform Commission report on China's Automobile Industry Development Policy. The report set the standards for foreign ownership, environmental protections, traffic safety, brand strategy, foreign investment, and energy security. The policy emphasized the need to restrict foreign vehicle manufacturers to a maximum 50 percent stake in joint ventures with a maximum of two Chinese partners.[9] The Chinese government also places tariffs of 25 percent on all imported vehicles and 10 percent to 15 percent on all auto parts. (In comparison, the United States places a mere 2.5 percent tariff on both most imported autos and most auto parts.) These and other restrictive policies readily demonstrate the "infant industry" approach the Chinese government takes with the auto industry—protecting local players until they can compete on the international market.[10]

Chinese New Motor Vehicle Sales (in units)

	2002	2003	2004
Personal Use Vehicles	1,358,908	2,428,405	2,786,866
Commercial Use Vehicles	2,211,540	2,545,555	2,873,981
Total Motor Vehicles	3,570,448	4,973,960	5,660,847

Source: Department of Commerce Report, 2006

China uses a variety of means to stimulate domestic auto sales. The government subsidizes gasoline production to hold its price around $2 per gallon. Regional and local governments offer discounted land for factories and loans from state banks.[11] The municipality of Shanghai even built a $320 million, state of the art, 5.4 kilometer race track to fuel "car-mania." These moves and other incentives have helped to quadruple the number of passenger cars on the road from six million in 2000 to nearly 24 million in 2006. In line with Beijing's ambitions, car sales rose 54 percent for the first quarter of 2006.[12] These policies are helping China's citizens to leap from a transportation system based on bicycles to one dependent on autos—all in the space of a decade. With a strong domestic base, China will achieve the economies of scale far more rapidly that will allow it to become a global player in the auto and auto parts industries.

Export-led growth has been a major component of China's overall economic development plan for several decades. China's industrial strategy encourages Chinese-controlled foreign partnerships to secure advanced technology and know-how in order to develop and export higher value-added goods. Few industries illustrate this strategy better than the Chinese auto industry. Capacity has already outstripped domestic demand by 10 percent to 20 percent and China has begun exporting domestically manufactured vehicles to Europe and Australia.[13] According to a report by Robert W. Baird Limited, a London-based securities firm, "exports should grow substantially over the next few years, with Chinese original

equipment manufacturers pursuing exports particularly aggressively ... Global original equipment manufacturers (joint ventures with Western partners) have already begun exporting from China ... global manufacturers will likely begin exporting from the country as advancements in the local supply chain reduce costs and allow more efficient production." [14]

The Commission toured such a joint venture during its June 2006 fact-finding trip to China. In Wuhan, Dongfeng Motor Company Ltd. teamed up with Citroen and Peugeot to produce nine different models from a single, fully-integrated stamping, welding, painting, and assembly line—a feat of engineering and just-in-time delivery. Dongfeng officials said that there were no plans to export their product, but the high-end Citroen Triumphe parked at the end of the assembly line seemed to tell a different story. The car, selling for $25,000 in China, is priced far from the reach of all but the wealthiest drivers but would be a strong competitor at that price in the United States and Europe.

China's Impact on the American Auto Sector

The export of Chinese manufactured vehicles to the United States in the near future will further complicate the situation for American automobile assemblers. Chinese nameplates have yet to appear in the American market, but plans already are underway to produce cars in China and sell them in the United States. Experts predict that Chinese companies such as Geely Automobile Company and Chery Automotive Company could begin exporting vehicles to the United States within the next five to 10 years. Chery Automotive has announced plans to export cars to the United States by 2009.[15] Geely has targeted entering the U.S. market somewhere between 2009 and 2011.[16]

The arrival of Chinese-produced cars in the United States will bring additional challenges to the American Big Three (Ford, General Motors, and the Chrysler portion of Daimler-Chrysler). The Big Three already have lost significant market share to foreign automobile manufacturers over the last several decades. In 2005 the share of the U.S. market held by Detroit's automakers fell 2.6 percent to just 56.8 percent overall, a record low. For 2005, GM announced domestic losses of $8.6 billion, its second worst showing in history. More recently, Ford announced a 2006 third quarter loss of $5.8 billion, it worst quarter since 1992.[17] Meanwhile, some analysts expect Big Three production to contract further in 2006, their volume replaced both by U.S.-based Japanese, Korean, and German manufacturers, and by imports.[18]

Losses in market share are also having a devastating effect on the American parts manufacturing community. Even though foreign transplants have moved their assembly facilities into the United States and are providing American workers jobs at these plants, the U.S. manufacturing economy is still losing out overall. Primarily, this is because the Big Three source more of their parts from U.S.-based manufacturers than do the foreign transplants operating in the United States. The foreign transplants also tend to keep some high value-added operations—research and development, engineering and design and marketing—back at the headquarters in Japan, Korea, or Germany. According to the Level Field

Institute, "There are 20 times more R&D workers in Michigan alone than the 14 Japanese auto manufacturers operating in the U.S. employ nationwide. Ford, GM, and Daimler-Chrysler spend $16 billion in research per year. In Michigan alone, 65,000 employees conduct research at approximately 200 facilities."[19] A strong, fully-integrated, U.S.-based auto industry also supplies a greater stimulus to the U.S. industrial base than the foreign nameplates because American car makers support a larger number of domestic producers than do their foreign competitors.[20]

To offset such current and projected losses, American manufacturers have looked beyond the U.S. market. China's motor vehicle sales growth rate of 15 percent and total sales of 5.92 million vehicles in 2005 have justified the interest of American auto manufacturers in investing in China where they thus far have done very well.[21] In 2005 General Motors became China's leading auto supplier, selling over 665,000 vehicles and capturing 11.2 percent of the market. Last year Ford produced 82,225 vehicles in China and increased sales by 46 percent.[22] U.S. exports of cars and light trucks to China reached $340 million in 2005, up 253 percent for the year. China has lowered import tariffs and quotas that once made these kinds of sales impossible because it has been required to do so as a result of acceding to the WTO, although further improvement is still needed. Nevertheless, the Big Three's plans emphasize investing in Chinese production rather than attempting to export to China from U.S. plants, resulting in creation of fewer jobs here in the United States.

The advantages the China-based auto industry enjoys are plentiful. Recently, Beijing began offering low interest rates to domestic carmakers with the stated intent of lifting the domestic market share of Chinese nameplates from 20 percent to 60 percent.[23] Chinese laws offer low tax rates to foreign firms investing in China and protect them with import tariffs of 25 percent on cars and some auto parts. Added to that is the huge subsidy provided by an undervalued renminbi. Chinese currency manipulation enhances the price competitiveness of all manufactured goods that are exported to the United States.[24] China also rebates its Value Added Tax on products that are exported from China, reducing costs an additional 17 percent.[25]

But U.S. automakers are facing a dilemma. Currently, investing in China seems to make good business sense. Servicing the rapidly growing Chinese market can yield high profits. But with China's requirements that foreign auto firms form joint ventures with domestic companies, and that control of such companies must rest in Chinese hands, U.S. auto companies are transferring technology, management acumen, and design and engineering know-how to potential competitors. Soon, U.S. manufacturers will find themselves competing against Chinese firms that they themselves have armed with cutting edge skills.

Fearing that Beijing is about to reverse the policy of attracting foreign investment in autos by revoking the tax breaks, cheap land, and favorable loan terms, U.S. auto companies are afraid to speak out. Openly criticizing the unfair trade practices that many American businesses face in China sometimes has resulted in retaliation by the Chinese government. During the Commission's June trip to

Beijing, Shanghai, Wuhan and Hong Kong, American business representatives complained privately about a wide range of Chinese government practices they said discriminated against foreigners. Yet none was willing to be quoted about the theft of intellectual property, arbitrary tax and regulatory rulings, the arbitrary decisions of the courts, or a host of other problems. The reason: the fear of retaliation by Chinese authorities and the loss of special privileges afforded foreign firms. Indeed, representatives of the Big Three explained their unwillingness to testify at the Commission hearing in Dearborn by citing the potential displeasure of Chinese officials and the possibility of retaliation.

China's Impact on American Auto Parts Manufacturers

Many American auto parts makers already are struggling to survive. China ranks just behind Japan ($16.4 billion) and Germany ($6.7 billion) in the value of auto parts shipped to the United States. By contrast, the United States exported $55.1 billion in parts in 2005, but nearly 80 percent of those were bound for Mexico and Canada where most were assembled into cars that were exported back to the United States. In all, the U.S. imported $5.4 billion in parts from China in 2005, 10 times the amount of U.S. parts exported to China.[26]

China's lack of effective intellectual property rights enforcement is also working against many American parts manufacturers who face the copying of their products and the theft of their brand names. As U.S. manufacturers shift production to China, they are forced to compete against counterfeit versions of their own products. As Terrence Keating, President of Accuride Corporation, told the Commission, although "the product may be a duplicate in style, [the] quality of some of the products falls far short of the standards required to protect the safety of the American motorist. The warranty claims filed as a result of these knock-off products are creating a negative economic and safety impact."[27] He further testified "that it is very difficult to estimate the negative impact of these knock-off products in lost market share, damaged brand name, and overall value, but it safe to say that is it very significant."[28]

On September 14, 2006 the United States, Canada, and the European Union filed a formal complaint against China in the WTO over the issue of 25 percent tariffs placed on some imported auto parts. The complaint was filed after consultations with China on the matter broke down. The basis for the complaint is that China has imposed a domestic content penalty on cars composed of more than 60 percent (by value) of imported parts, an action prohibited by WTO rules.

Under Beijing's 2004 dictates, if a car assembled in China is composed of more than 60 percent imported parts, a 25 percent tariff is to be levied on those parts rather than the usual 10 percent tariff. This is more than twice the normal tariff rate for auto parts, but equal to the tariff rate on a finished, imported car.[29] The higher tariff appears to have three purposes: (1) to encourage the domestic sourcing of parts used by the Chinese auto industry; (2) to discourage the purchase of imported parts; and (3) to persuade parts makers based in the United States, Canada, and Europe to move their operations to China. According to U.S. auto executives,

Chinese authorities have asked U.S.-based auto companies to pressure the Bush Administration to drop the WTO case.

There is a growing exodus of American parts makers to China. Joint ventures by auto assembly companies in China have been pressuring U.S. suppliers to relocate to China to service factories there. To further encourage investment by U.S.-based parts manufacturers in China, Beijing imposes no joint venture requirements on foreign parts suppliers and does not limit their equity positions in any joint ventures in which they are engaged. According to the U.S. Department of Commerce, most of the world's largest tier one suppliers (direct suppliers of original equipment) already have located plants and research facilities in China.

The continued shift of parts manufacturing to China will have severe consequences for U.S. employment. The U.S. Bureau of Labor Statistics reported that auto parts production in the United States accounted for 743,600 jobs, or 67.6 percent of the 1.1 million workers involved in overall auto manufacturing in 2005. The parts industry is already reeling from a combination of imported parts and production cut-backs by their biggest customers—Detroit's Big Three. The Original Equipment Suppliers Association predicts a decline of 11 percent in employment in the sector between 2003 and 2010. These losses would come on top of a huge industry consolidation now underway. While there were 30,000 companies in the North American auto supply chain in 1990, there were just 8,000 in 2004, according to the association.[30]

These effects are being felt throughout industrial America. Young workers entering the labor force no longer see a manufacturing sector capable of offering them reliable long-term employment, several witnesses told the Commission. Furthermore, U.S. manufacturers competing against Chinese goods now have such small margins that they no longer are able to finance the training that new workers need.[31] Consequently, the average age of the workforce in this industry is rising sharply, and many of its workers are approaching their retirement.[32] Mark Schmidt, President of Atlas Tool, Inc., testified to the Commission that once the skill sets of tool and die manufacturing are lost, it will take a major and expensive effort, and a substantial period of time, to reconstitute those skills in America. He insisted that this loss will permanently damage the defense industry and national security.[33]

Meanwhile, many of those companies that have survived are in distress. More than a dozen major U.S. suppliers filed for bankruptcy protection in 2005. The largest, Delphi, filed for Chapter 11 bankruptcy protection in October 2005 while the second largest, Visteon, received a bailout from Ford. Industry analysts predict that of the 800 parts makers in business in 2000, only 100 will remain by 2010 due to bankruptcies, mergers, acquisitions, and migration to other lines of work.[34] The debt of twenty of the top 29 supplier companies in North America with public debt carried junk bond ratings at the end of 2005, according to an assessment by Automotive News.[35]

China's Impact on the U.S. Defense Industrial Base

The weakening of the U.S. automotive and automotive parts industries is affecting the American domestic industrial base and has

several national security implications. For example the industries that produce Advanced Technology Products are being threatened. The average automobile contains 18 microprocessors, a variety of sensors, and other components that require a high degree of technological know-how. As sourcing for these domestic high tech components dwindles, so too does America's high tech prowess. For Advanced Technology Products[36], in 2005 the United States had a $47 billion trade deficit with China, a 30 percent increase over 2004.[37]

American technical prowess also will be affected by the decline of some companies and industries not usually associated with Silicon Valley, as the withering of the U.S. auto industry undermines them. For example, Mr. Schmidt testified before the Commission that his family-owned tool and die shop has contributed to the development of both the F/A–22 Raptor fighter plane and the Space Shuttle programs. It is under siege as the auto industry reduces purchases of its products.

Because the United States is no longer capable of producing all the manufactured goods it consumes, it has become increasingly reliant on foreign nations. This dependency is the natural outcome of an increasingly globalized world. However, unfair trade practices employed by foreign nations also play a large part in the decline of U.S. industrial capabilities and are undermining U.S. national security. China's undervalued currency, high import tariffs, illegal tax breaks, joint venture requirements, inadequate commitment to the rule of law, and shoddy protection of intellectual property all undermine our ability to maintain the robust and competitive industrial base that our military needs to operate securely and at 100 percent.

America's industrial deterioration has had an impact on the institutions responsible for defending U.S. national security. As the military has become increasingly reliant on the private sector to provide it with the parts and components it needs to operate, it has exposed itself to the vagaries of the global supply chain. This problem has been exacerbated as the military has become increasingly reliant on commercial off-the-shelf technologies.[38] A loss of access to necessary components easily could diminish our ability to keep our armed forces operational and effective.[39] China, which is now the source of critical components, could damage the U.S. defense establishment by slowing the supply of those components.

As Department of Defense policies increasingly call for reliance on acquiring and using commercial off-the-shelf items, it becomes commensurately more difficult to comply with laws that limit the amount of foreign components in U.S. defense systems—partly because the domestic sources of such items are disappearing. For example, the Berry Amendment[40] was intended to "restrict Department of Defense expenditure of funds for supplies consisting in whole or in part of certain items, including textiles and certain metals, not grown or produced in the U.S. and its possessions."[41] As U.S. production capabilities shift overseas, the components available on the open market have become integrated into the global supply chain. Consequently, it has become nearly impossible to fully trace the origin of these components. In an attempt to limit costs and harness the high level of innovation of the private sector,

the U.S. defense establishment is exposing its supply chain to elements beyond its control.

The growing amount of private sourcing for the military also prevents the Pentagon from exercising prudent inventory control. Brian Suma of the U.S. Army's Diminishing Manufacturing Sources and Material Shortages system testified before the Commission that his agency is fighting a difficult battle against obsolescence with ever fewer resources. As many of the Army's traditional suppliers go out of business, it is becoming more difficult to locate the components the Army needs to keep equipment operational.[43] Randall Gaeremink, Associate Director of Engineering at the Tank-automotive and Armaments R&D and Engineering Center, testified that the Army already is running at full capacity to keep its existing arsenal operational. In fact, in order to keep operational some weapons systems currently being used in Iraq, at times the Army has been forced to rely on components cannibalized from other systems because the original manufacturer of those components has gone out of business.[44] Furthermore, Mr. Gaeremink testified that maintaining an industrial surge capacity to fight a protracted, large-scale war is no longer feasible given the deterioration of the industrial base.[45]

Producing finished vehicles and weapons systems has become even more challenging as production of components shifts overseas. The longer the supply chain is, the more likely it is that a minor disruption in the supply of a critical part will affect a weapons system. This is particularly true in the case of the most complex weapons systems. Modern battle tanks without their complex thermal and infrared sights are less effective. A bottleneck abroad in the production of such critical components, particularly during a war when supply lines can be disrupted, could ground fighter jets and sideline armored personnel carriers—or if a complete weapon system or vehicle available only from a foreign supplier cannot be obtained in the first instance, U.S. troops could be forced to prosecute a conflict without it.

Opto-Electronics: An Automobile Component and Vital Defense Technology

According to a 2006 study by the U.S. Department of Commerce's Bureau of Industry and Security, while imaging and sensor technology previously was employed primarily for military purposes, uses in commercial industry have increased significantly in the last 10 years, including uses by the automotive industry.[46] The military uses imagery and sensor technology in applications such as target recognition; the automotive industry applies this technology to night driving. "The primary driving force for increased defense sales during the [Commerce Department's] survey period [2001–2005] was the requirement for imaging and sensors equipment for the Iraq and Afghanistan operations. Non-defense sales growth during the same period reflected heightened demand for imaging and sensors equipment

Opto-Electronics: An Automobile Component and Vital Defense Technology—Continued

by law enforcement, electronics, firefighting, medical, and automotive industries."[47] U.S. firms continue to dominate in this defense sector for imaging and sensor technology, while Japan, France, Korea, China, and other nations are meeting commercial demand.[48]

According to the study, from 2001 to 2005 China experienced the second largest growth rate in this sector, 159 percent, behind Belgium-Luxembourg. China also is one of the fastest growing markets for commercial applications of imaging and sensors. However, due to current U.S. export controls on these products, many U.S. companies are not bidding to supply these items to foreign purchasers, and the products then are supplied by companies in other nations. This includes China, whose exports of dual-use thermal imaging cameras are gaining market share.

China will be a major factor in the next ten years of the opto-electronics industry. In his testimony before the House Committee on Small Business in 2003, Professor Siva Sivananthan, an infrared technology expert, stated that "China, India, Israel, France, Germany, and the UK are all investing heavily in developing new systems and technologies. They also have growing markets outside the U.S."[49] The National Intelligence Council agreed that China is "making heavy investments" in this industry and that it is "actively courting foreign participation in the form of advanced technology and critical components."[50] The Council also agreed with Professor Sivananthan's statement that "The eroding U.S. industrial base [and] the lack of innovations developed by small businesses and universities combined with growing foreign efforts are clearly a recipe for the loss of U.S. supremacy and an increasing reliance on foreign suppliers." Professor Sivananthan further testified that the automotive industry's model of supplying infrared materials and components from specialized domestic suppliers allows the component suppliers to perform their own engineering.[51] However since 2003, automotive component suppliers such as Visteon and Delphi have succumbed to financial difficulties, partly due to competition from China.

In response to Professor Sivananthan's disconcerting testimony, the National Intelligence Council conducted a study[52] of infrared imaging systems. While the United States currently is the leader in this technology, the Council's study estimated that a combination of China's centrally planned focus on developing night vision technology and its economic position to exploit export opportunities will enable China to gain a significant capacity and move into second place in the world by 2014, surpassing all other nations except the United States. It is significant to note that two nations China will surpass, France and Israel,

Opto-Electronics: An Automobile Component and Vital Defense Technology—Continued

are cooperating with China to enable it to achieve this technological development. The Council recommended adopting and strictly enforcing export controls to prevent the transfer of U.S. high performance infrared technology and to relax export controls of low-performance imaging technology in order to enable U.S. manufacturers to compete against Chinese producers.[53] Representatives of the U.S. industry who responded to the Commerce Department study echoed this concern.[54]

The success of the future imagery and sensor industry is directly linked with the automotive industry. U.S. industry is most responsive to changes in the imagery and sensor industry that occur within the automotive sector. Between 2001 and 2004, export controls on sensors and cameras were amended to permit additional foreign sales. The only significant increase in exports resulting from these amendments was in the export of night vision cameras used in automobiles produced by foreign manufacturers.[55]

In order to preserve a functioning, viable imagery and sensor industry that is crucial to our defense industrial base, it is critical to maintain a robust automotive components manufacturing sector in the United States. Specifically addressing electronics and sensor manufacturing, the President's Council of Advisors on Science and Technology determined in 2004 that the research-to-manufacturing process is not sequential—i.e., moving in a single direction—but rather that it "results from an R&D-manufacturing 'ecosystem,' consisting of basic R&D, pre-competitive development, prototyping, product development, and manufacturing, with successful avenues of research and development being assisted by an understanding of the manufacturing situation as it presently exists. Design, product development, and process evolution all benefit from proximity to manufacturing, so that new ideas can be tested and discussed with those working 'on the ground.'"[56]

In summary: If the United States wants to maintain its lead in this field that is of such consequence to U.S. defense, it must maintain a vibrant domestic industry. In order for the domestic industry to remain vibrant, it must have sufficiently strong domestic and foreign sales to generate the profits necessary to support the "R&D-manufacturing 'ecosystem'" the National Intelligence Council identified as crucial to the industry. As the leading civilian customer of the U.S. opto-electronics firms, the auto industry is key to this equation, and if the U.S. auto industry atrophies, the U.S. opto-electronics industry will be threatened. China is taking the steps to become one of the world's leading opto-electronics producers; should the U.S. industry falter, the United States could become dependent on China and other nations for opto-electronics required by U.S. high tech-dependent weapons systems.

RECOMMENDATIONS

- The Commission recommends that Congress support the Administration's WTO dispute resolution case against China's proposed imposition of a 25 percent tariff on imported auto parts.
- The Commission recommends that Congress fully fund programs such as the Commerce Department's Manufacturing Extension Partnership Program (a nationwide network of expertise and advice to aid small and medium-sized American manufacturers) that provide counsel on such matters as worker training, process technology, information technology, and supply chain integration to help U.S. manufacturers compete globally.[1]
- The Commission recommends that Congress require the U.S. Department of Defense to trace the supply chains of all components of critical weapons systems.

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CHAPTER 5
CHINA'S INTERNAL PROBLEMS, BEIJING'S RESPONSE, AND IMPLICATIONS FOR THE UNITED STATES

> The Commission shall investigate and report on "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."

Key Findings

- While China's rapid economic development continues, serious internal problems exist, such as environmental degradation, increased energy demand that threatens to outstrip energy supplies, corruption, censorship, and increasing social discontent.
- China has acknowledged some of its internal problems and even enacted rules or regulations intended to address them. The United States government is conducting some bilateral programs with China aimed at remedying internal problems. However, China is not allocating enough of its own time, energy, or resources to effectively solve many of them.
- A number of the internal challenges facing Beijing have international implications, including implications for the region and the United States. Some of these problems are not limited by boundaries, such as pollution and epidemic diseases originating in China. The number of Americans going to China, the increasing number of Chinese going abroad, and Beijing's failure to address these problems could result in the spread of epidemic diseases to the United States.
- The constraints of China's one-party system limit its ability to deal with its internal problems.

Despite its booming economy, China faces some serious internal challenges, many of which could have negative global implications. According to Dr. Bates Gill of the Center for Strategic and International Studies, "The China we will face in 10 years' time will be profoundly shaped—for better or for worse—by the enormous domestic challenges unfolding in the country."[1] For 25 years, China

achieved a remarkable economic expansion with an average annual growth rate between 8 and 9 percent. The Chinese Communist Party's hold on power has benefited from this growth; aided by improved collection efforts, the national government's 2005 revenue grew roughly 20 percent to $395 billion.[2] Despite such economic success, Beijing faces a number of domestic challenges such as corruption and rising energy needs that could easily derail or delay China's recent steady economic rise. In addition, Chinese solutions to internal problems affect the country's willingness or ability to behave as a responsible international stakeholder and live up to international commitments.

Some of China's internal problems result from the inequitable distribution of wealth and services that the Chinese people believe the central government has failed to address, or has proven incapable of resolving satisfactorily. Others reflect direct dissatisfaction with the government or government officials—for example, the corruption, nepotism, or favoritism of those officials.

Increasingly, disaffected Chinese citizens are risking physical mistreatment and imprisonment to demonstrate their dissatisfaction with the government.[3] In 2005 the Chinese government reported as many as 87,000 "public order disturbances" in China, although official statistics are often inaccurate.[4] (Statistics to date for 2006 suggest a reduction in this number, but that may not be accurate or meaningful.)[5] Beijing's ability to manage dissatisfaction and successfully address its causes could affect China's stability, and in turn the region's, affecting U.S. security interests and the world economy.

How China addresses its internal problems is a serious issue. Without a reliable rule of law system with which to remedy the causes of their dissatisfaction, the Chinese people increasingly are likely to turn to public protests and disturbances. The Chinese Ministry of Public Security reported a 13 percent increase in the number of "mass gatherings that disturbed social order" for 2005.[6] Unfortunately, government forces increasingly respond to protests with injurious or lethal force that could lead to larger scale violence.[7]

Serious unrest could lead to political instability. For example, a massive government crackdown on protesters might result in regional problems such as mass refugee flows and an increased Chinese military presence at China's borders to maintain control of those flows, which could change regional strategic thinking.[8] Moreover, Beijing might seek to deflect domestic criticism by increasing nationalist sentiment or engaging in aggressive foreign or military policies. According to former Director of Central Intelligence James Woolsey, "... a China that is getting nervous because of unemployment and economic changes could become hostile, particularly over Taiwan."[9]

China acknowledges some of its problems, and its officials say they are working to address them, but those claims fail to match the evidence in numerous cases. According to Dr. Anne Thurston, an independent researcher, "For whatever reasons—whether through incompetence, indifference, an inability to innovate, or a failure of will—the Chinese government is not coming up quickly enough with solutions to the country's pressing problems. While

the government pays lip service to these problems . . . it seems unwilling or unable to solve them." [10]

Challenges facing China's leaders

Health Concerns and the Diminution of the Social Safety Net

China's advancements in health and social services lag that country's recent economic achievements.[11] A large portion of China's population may face serious health issues as a result of crowded, polluted cities, unsafe workplace conditions, and poor health care access, particularly in rural areas. As China's people travel overseas, and as Americans travel to China, diseases there could spread rapidly around the world.

As Dr. Gill explained to the Commission, "Despite remarkable gains in key health indicators . . . , China's health situation faces many problems. With an ailing public healthcare system and social safety net, China is increasingly vulnerable to the spread of emerging and re-emerging infectious diseases." [12] HIV/AIDS and the avian flu (a.k.a. 'bird flu') are serious concerns. China estimates over 600,000 persons with HIV/AIDS in China, the majority unaware they are infected.[13] Part of this problem comes from the government's reluctance or inability to inform its citizens about the problem; according to one report, "There is still a massive need in China for public HIV/AIDS education." [14] Given the communicability and lethality of this virus, and its potential to affect China's workforce and healthcare system, China's HIV/AIDS problem could become a global concern.

The same is true for the acute strain of the avian flu. China's large human and poultry populations, and the close proximity of the two in many areas, create conditions ripe for development of an epidemic. And with a poor health care system to address an outbreak of avian flu, China could become the epicenter of a pandemic.[15]

According to a 2006 International Monetary Fund report, a severe avian flu outbreak could lead to global supply disruptions due to absenteeism by sick or concerned workers, lower domestic consumer spending, and reduced foreign investment.[16] China's manufacturing economy, and consequently the world economy, would be severely affected by an epidemic. The World Bank estimates that the initial annual cost to the global economy from an avian flu outbreak could reach $800 billion.[17] Given the potentially devastating global consequences of an avian flu pandemic, China must work closely with its local governments, its health care sector, other countries, and international bodies to prevent a catastrophic pandemic from occurring.

Since October 2005, there have been more than 30 outbreaks of avian flu and at least twelve Chinese have died from it.[18] In the past, China failed to provide timely information about significant public health issues such as the severe acute respiratory syndrome (SARS) outbreak, possibly to avoid international embarrassment or to minimize the impact on domestic stability. The Commission is concerned that the Chinese government will follow its past patterns of behavior and will not provide accurate and timely information about outbreaks of diseases.

To successfully combat such outbreaks, China needs a more capable and extensive domestic public health care system. Poor health care is especially prevalent in rural China where the traditional system of free health clinics has "disintegrated."[19] Beijing, likely fearful of growing civil discontent, has acknowledged the need to improve rural medical systems.[20] But in poorer parts of China, Dr. Gill explained that local governments are "particularly hard-pressed to provide decent healthcare ..." given scarce tax revenues.[21] Health care also is a problem for urban Chinese because of the rising costs of treatment.

Health care is not the only social program suffering in China today. China's pension program has financial difficulties and is poorly suited to accommodate China's aging population[22] and its rising cost of living.[23] The number of urban retirees will approach 70 million by 2010 and 100 million in 2020 and will stress the retirement system that already is "riddled with problems of inadequate funds and narrow coverage."[24] Those who are not entitled to pension support will have to rely on family support in their later years.[25]

China recently acknowledged the need to reform its pension system,[26] but accomplishing this will be a major challenge given that the system has unfunded liabilities of approximately $1.5 trillion.[27] Should popular dissatisfaction with this troubled system grow, Beijing could face protests. To solve the problem, the Chinese government may be forced to raise taxes or reallocate financial resources, which could hinder development in other areas.

Environmental Degradation

China currently has an "enormous environmental footprint" filled with polluted air and water. After years of rapid industrial and economic development China has some of the most polluted land, air, and water anywhere on the globe. Some of China's largest cities, urbanizing at a rapid rate, are the most polluted in the world.[28] Environmental degradation has been linked to civil unrest, reduced worker productivity, and premature deaths.[29] The costs of preventing further environmental damage and mitigating damage caused by past pollution could have a significant impact on China's economy, possibly leading to further domestic frustration if this prevents China from reaching its GDP goals.[30] But ignoring environmental problems also could damage the Chinese economy by destroying the productivity of farmland, making water unusable for agricultural or industrial purposes or human consumption, and producing calamitous health effects.[31]

There is growing dissatisfaction as a result of the government's ineffectiveness in protecting the environment, and ensuring that drinking water and air are clean. This is viewed as such a serious problem throughout China that it eventually could threaten the legitimacy and control of the Chinese Communist Party.[32]

Water pollution is a particular problem for China and the health of its citizens. Dr. Elizabeth Economy, director of Asian Studies at the Council on Foreign Relations, testified to the Commission: "Three hundred million [Chinese] people drink contaminated water on a daily basis ... 190 million of those drink water that is so contaminated that it's making them sick."[33] According to the World

Health Organization, water sampling in several areas shows high levels of petroleum, ammonia, nitrogen, mercury, and volatile phenol.[34] Chinese industrial and chemical factories, some of which are key to Chinese economic and trade profitability, are major sources of water and air pollution, and illegal industrial dumping is widespread. Two tragic examples occurred in 2005. In November 2005, a chemical spill in northeast China left millions without water for days; a few weeks later, a state-owned smelter in Guangdong Province released a large amount of carcinogenic cadmium into the Bei River.[35]

Along with water pollution problems, China also is experiencing a water shortage. Given its large population, China has very low per capita fresh water holdings, and Beijing has spent large sums of money on water supply programs aimed at obtaining access to and redistributing water resources.[36] Such projects include the North-South Water Diversion Scheme which, when completed, will move Yangtze River water to water-short northern China. But despite attempts by the Chinese government to improve water supply, shortages persist. These hamper the productivity of both China's industrial and agricultural sectors and ultimately could provide "the catalyst for united demonstrations throughout the country . . ."[37]

According to Dr. Economy, there have been a number of environmental-related protests in 2005, some of which resulted in beatings and deaths.[38] For example, in April 2005, sixty thousand people in the village of Huaxi, Zhejiang reportedly protested against thirteen chemical plants that polluted the water and soil around the village. According to one report, two people died in the clashes between demonstrators and police. In August, villagers again threatened protests because local officials had failed to fulfill promises to redress the situation.

Air pollution is also a tremendous problem, stemming from China's reliance on coal-based power plants for much of its energy, and from ineffective pollution controls.[39] In a June 2005 report, China acknowledged that it experienced serious increases in emitted pollutants.[40] China's reliance on coal, inefficient energy technologies, and emissions from a growing number of cars, trucks, and factories will only increase air pollution.

China's State Environmental Protection Administration acknowledges China's environmental problem in an official report published in June 2006:

> *"The conflict between environmental and [economic] development is becoming ever more prominent. Relative shortage[s] of resources, a fragile ecological environment and insufficient environmental capacity are becoming critical problems hindering China's development . . . Water, land and soil pollution is serious, and pollution caused by solid wastes, motor vehicle emission and not-easily-degradable organic matter is increasing. In the first 20 years of the new century, China's population will keep growing, and its total economic volume will quadruple that of 2000. As the demand for resources from economic and social development is increasing, environmental protection is facing greater pressure than ever before."*[41]

China has enacted a large number of environmental protection laws. But enforcement of those laws has been seriously deficient. In June 2006, Beijing said it would "mobilize all forces available to solve the pollution problems that are causing serious harm to people's health" and would shift from using mainly administrative protection measures to employing more comprehensive ones, including "legal, economic, technical and necessary administrative measures to solve environmental problems."[42] In the past, Beijing has urged its industries and citizens to protect and improve the environment and has stressed the importance of its environmental laws, but with little success.[43]

Moreover, the agricultural sectors and urban water demands of downstream countries such as Burma, Thailand, Laos, Cambodia, and Vietnam could suffer as China considers building numerous dams to generate electricity and increase its own water supply.[44] China's water needs could affect its relations with Russia, leading it into either closer cooperation or conflict with Moscow,[45] either of which could have security-related implications for Washington.

Pollution ignores political boundaries, and China's pollution threatens the health of populations of other countries, including Americans. This spring an American satellite tracked a cloud of Chinese pollutants traveling across the American west coast, eventually reaching detectors in the mountains of California, Washington, and Oregon.[46] If China does not improve its environmental situation, "considerably more emissions could reach the United States [in the next few years]."[47] Increased Chinese pollution in the United States could lead to increased tensions between Beijing and Washington.

Neighboring countries such as Japan and South Korea are concerned about China's pollution. "In all those wealthy societies on China's periphery, public concern about the environment has grown in recent years, and China's rapid growth makes it an obvious target for blame."[48] Japan blames China for much of its acid rain problem.[49] Other trans-border environmental problems coming from China include untreated sewage flows from the Yangtze River into the Pacific[50] and the discharge of toxic benzene and other chemicals that flow downriver into Russia. In fact, Russian officials continue to complain about river pollution originating in China.[51]

Corruption

Corruption is a widespread problem in China. It exists at virtually all levels—from village officials to executives of mammoth state-controlled monopolies—and appears to be particularly pervasive at the local level. It has implications for multinational companies working in China, saps China's economic efficiency, and is a significant factor in the Chinese Communist Party's lack of success in combating other serious problems such as environmental pollution.

Corruption also is a factor in rising domestic dissatisfaction. Specifically, corruption and abuse of power are often associated with land seizures in rural China, which fuels unrest. According to one political analyst, Joseph Cheng, "In appropriating land, there's very often corruption and inadequate compensation for the peasants, so the peasants protest."[52] Some protests, including a Decem-

ber 2005 demonstration that took place in Shanwei city, turn violent, leaving villagers and activists wounded or dead.[53] Adding to the resentment, some local officials supplement their incomes by placing illegitimate surcharges on the taxes or fees the local government collects from citizens.

Fraud and corruption also are found at the corporate level in China.[54] Weak internal banking laws and enforcement efforts allow for bribes, kickbacks, and non-performing loans to cronies. Bribes in connection with marketing and sales activities win contracts with the state-owned enterprises or government offices.[55] The practice of using Chinese fronts and bribes to secure contracts is so pervasive that it is described as "normal" in China.[56] And indeed, European and Asian anti-bribery restrictions that are weaker than U.S. restrictions reinforce these practices. It has been reported that some Chinese firms funnel bribe money on behalf of U.S. companies that are prohibited by the U.S. Foreign Corrupt Practices Act from making such expenditures.[57]

The growing intensity of the public's reaction to government corruption could pose a threat to the Chinese Communist Party's legitimacy and power. Perhaps in an attempt to placate some of its aggrieved people, and/or purge political enemies, the Chinese government arrested nearly 9,000 officials for corruption in 2005, convicting roughly 2,000 of them.[58] President Hu Jintao explained that "Corruption is still rampant in some fields, as cases of cadres abusing power for personal gains are frequently reported,"[59] and Beijing has taken some well-publicized steps against it. In June 2006 the deputy mayor of Beijing, Liu Zhihua, was removed for undisclosed corruption-related activities.[60] Later that month Vice Admiral Wang Shouye was forced to resign as deputy commander of the Chinese Navy because he had accepted bribes.[61] In September 2006, Shanghai Party Boss and Politburo member Chen Liangyu was arrested on allegations that he used municipal pension funds to speculate in real estate.[62] Members of China's parliament also have been removed for corruption-related activities.

Despite the rise in high-profile arrests, the likelihood of eliminating widespread corruption in the near future is small, because the Chinese political system and culture often reward loyalty through patronage and protection. According to Dr. Albert Keidel of the Carnegie Endowment for International Peace, efforts to reduce Chinese corruption face an uphill climb because "the corporate structure of China's combined governmental and party organization neutralizes efforts to discipline [corrupt] government behavior. Normal channels require higher officials to work through those same local officials who are objects of investigation."[63] Furthermore, China is unlikely to spend the resources to monitor local-level corruption in a way to positively affect the problem at that level.[64] As long as widespread corruption continues in China, it will provide a source of domestic dissatisfaction, and may force U.S. companies to decide between securing Chinese business and abiding by U.S. anti-corruption laws.

Rural Unrest

During the past decade, dissatisfaction and unrest have occurred with increasing frequency and intensity in China's rural areas.

This appears to be the result of a collection of factors rather than attributable to a single cause.

Wide and growing disparities between income levels and standards of living in Chinese urban areas, especially along the East Coast, and those in the rural interior are a significant cause of anger and dissatisfaction. Other issues also contribute to the problem. According to Dr. Thurston who testified before the Commission, "It [China's countryside] has too many people and too little land. It has not enough water. Taxes have been very, very high. Officials are often egregiously corrupt. Many parents cannot afford to send their children to school. The health system has crumbled. Some 80 percent of the people who live in China's rural areas are without medical insurance."[65]

Developers, working with corrupt local officials, arbitrarily seize peasant land without just compensation, which is another source of rural frustration and protest.[66] For example, in January 2006, in Guangdong province, hundreds clashed with authorities over inadequate compensation for land taken for commercial use.[67] In June 2005, hundreds of paid thugs attacked farmers protesting another land grab southwest of Beijing. Six were reported killed.[68]

In order to diffuse mounting tension in China's rural areas, in 2004 the Chinese government started direct subsidies to grain farmers, eliminated agricultural taxes, subsidized agricultural supplies, and increased rural infrastructure.[69] However, the benefit to the Chinese farmer of these steps was mostly symbolic, as the value of the eliminated agricultural tax represented approximately two to three percent of total Chinese tax revenue.[70] The eleventh Five-Year Plan also emphasizes rural reform, addressing among other things pollution, increased infrastructure to include roads and medical facilities, and increased economic opportunities.

As foreign investment expands beyond China's coastal region, local governments strive to achieve high economic growth rates by attracting businesses to relocate in their regions. These governments provide incentive packages that include favorable policies for land leasing and development. To prepare the land for economic investment, local governments often unfairly or illegally take land from local farmers and fail to distribute the legally required compensation. Profits directed toward the local government do not always benefit the development of public infrastructure or other social services needed in rural areas, and foreign companies increasingly may be associated with corruption, uneven development, and dissatisfaction toward the local government. This practice places foreign companies' operations at risk, especially if local populations—affected by the government's unwillingness to enforce land compensation laws—cannot receive tangible benefits such as employment from the company's presence in the area.

In its latest Five-Year Plan, Beijing acknowledged rural problems, but it has failed to take effective action to address the root causes. As a consequence, rural unrest increases and often leads to violence.

Worker Unrest

Chinese laborers face harsh working conditions, poor benefits, corruption, frequent layoffs, and unpaid wages. One worker in an

artificial eyelash factory described being locked in a factory dormitory at night, fed a monotonous diet of cabbage and rice, and allowed only one shower a week, while being charged the equivalent of $13 a month for room and board on a $24 salary.[71] At times frustration over these issues leads to violence, as was the case in September 2005 when shoe factory employees in Guangzhou rioted over unpaid wages.[72] Widespread factory shutdowns resulting from riots could threaten China's economy.

In most advanced industrialized nations, independent trade unions have been able to obtain better and fairer treatment for workers, but they have no significant role in China. The Chinese Communist Party's All-China Federation of Trade Unions acts mainly as a surveillance mechanism, doing little to promote workers' rights.[73]

With no means to effectively address their grievances, over the past few years Chinese workers have engaged in protests and other displays of frustration and anger. Unless the central government finds ways to reduce the mistreatment and victimization of workers, the nation and its economy likely will face increasing disruptive and costly protests. Chinese government concern with the problem is evidenced by the drafting of laws that give Chinese unions more input regarding issues such as compensation, working hours, work safety, and benefits.[74]

The Chinese government is aware that there are potentially large repercussions if protests expand or escalate significantly. In January 2006, unrest occurred in Guangdong Province that borders Hong Kong. Were such protests or unrest to grow in that area of China, a major commercial, trade, and financial center, the result could threaten the physical security of that center and affect U.S. and international capital flows and trade.

Worker unrest could threaten the global supply chain. For example, many computer components are manufactured in China, and the computer industry and users are particularly vulnerable to Chinese worker unrest or heavy-handed government responses to them.[75] In fact, some foreign investors are starting to voice concerns over the increasing unrest.[76]

China's Responses to Internal Problems and their Impact on the United States

The highest levels of the Chinese Communist Party are concerned about the internal conflicts China faces as economic development continues. Mass protests against unfair labor practices, official corruption, or the disintegrating healthcare and pension systems threaten the Party by calling into question its effectiveness and even its legitimacy.

Leaders of the Party are aware of the problems facing China, and legislative and administrative controls for many of these problems already exist. According to Mr. Jerry Clifford of the U.S. Environmental Protection Agency, China's current Five-Year Plan addresses "pollution, energy efficiency, and some of the environmental infrastructure inequalities between the urban and rural populations,"[77] while other sections of the Plan address healthcare and social pension systems.[78]

However, concern and legislation by the highest levels of the Chinese government do not ensure country-wide implementation. Rules made in Beijing are often ignored by officials in the countryside, who frequently are more concerned with local economic development. For example, in 2004 a Chinese State Environmental Protection Administration inspection of sewage treatment plants showed that only half of those built during the tenth Five-Year Plan were working; the rest were considered too expensive to operate by the local authorities.[79]

In addition, while laws promulgated by Beijing may be "on the books," they often are not effectively enforced, or are not enforced at all. Chinese citizens "are often unable to secure protection from the very courts and legal institutions to which they are appealing."[80] And in cases of corruption, it is often the local officials themselves who are the problem. As noted above, the combined Chinese Communist Party and governmental organization makes challenging corruption extremely difficult, since higher Party officials must work through the very same officials who are being investigated.[81]

With these outlets for grievances blocked, Chinese domestic discontent increasingly is expressing itself through protests. Should dissatisfaction increase to a troubling level, Beijing could seek to deflect domestic discontent by diverting it toward Japan, Taiwan, or even the United States.

The Chinese Communist Party has emphasized economic development to increase the standard of living of the Chinese people and reduce domestic dissatisfaction. However, as Mr. James Keith, Senior Advisor to the Bureau of East Asian and Pacific Affairs of the U.S. Department of State, told the Commission, "... China's economic 'miracle' is unfolding at high cost, not just in terms of environmental degradation and public health, but also in terms of an erosion of social and ethical values."[82] Beijing's favored solution to popular dissatisfaction may, in fact, be making these problems worse.

The Chinese government faces a dilemma—while continued economic growth may worsen problems such as environmental degradation and income inequality, thereby increasing domestic dissatisfaction, slowing growth to mitigate these problems may make them worse.

Furthermore, compliance with China's international agreements such as its accession agreement to the World Trade Organization may be seen by the Chinese government as hampering its ability to provide continued economic growth. Beijing's resistance to reform and increased transparency may stem from the belief that moving in these directions would decrease economic growth and lead to increased domestic instability.

China is facing growing internal problems and unrest, much of which is related to its continued economic growth. The over-arching question is, "Can the Chinese government solve these internal problems?" If so, Chinese government answers may not conform to U.S. and international expectations and agreements. At the same time, the United States must remain aware that if these internal problems remain intractable and continue growing, China's development—both economic and socio-political—may stop, or even re-

verse itself. If this happens, the Chinese government may look to deflect rising discontent by increasing nationalistic sentiments and blaming traditional "enemies" such as the United States for its problems.

U.S.-China Bilateral Programs Addressing These Problems

Because of the potential for China's internal problems to affect the United States, the U.S. government is working with that country to address a number of issues, from reducing environmental degradation to improving labor safety. Specifically, the U.S. Department of Health and Human Services' National Institutes of Health provided a $14.8 million multi-year grant to China for HIV/AIDS research in that country.[83] The U.S. Environmental Protection Agency has a continuing dialogue with its Chinese counterpart, the State Environmental Protection Administration, and works with Chinese officials to improve drinking water and air quality, especially in Yunnan province which has the highest rate of lung cancer in the world.[84] A U.S.-China Health Care Forum was held in 2005 in which the U.S. Departments of Commerce and Health and Human Services and China's Ministries of Health and Commerce participated, covering topics such as medical insurance systems and health care products and services.[85]

The U.S. Department of Labor funds projects in China that include a $2.3 million coal mine worker safety project, and a $4.1 million labor-related rule of law program aimed at educating workers and their employers about labor standards. China is developing a labor contract law with the Department of Labor's assistance.[86] The U.S. Department of Energy has an ongoing dialogue with its Chinese counterpart to improve energy efficiency, and the State Department's Bureau of Democracy, Human Rights, and Labor funds certain democratization, human rights, and rule of law programs for China.

RECOMMENDATIONS

- The Commission recommends that Congress encourage U.S. companies to work with their Chinese suppliers to improve China's environmental, labor, and safety standards, which would address some of the causes of unrest facing the Chinese government.
- The Commission recommends that Congress encourage American nongovernmental organizations and the State Department to promote new and existing efforts to support independent Chinese nongovernmental organizations, especially those working on rule of law, healthcare, workers' rights, and environmental issues.
- The Commission recommends that Congress instruct the Administration to promote new and existing cooperative efforts with China that improve China's responses to transnational problems, including infectious diseases and the environment.

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CHAPTER 6
CHINA'S MEDIA AND INFORMATION CONTROLS

> The Commission shall investigate and report on "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."

Key Findings

- The Chinese government has put in place extensive controls to direct the flow of information to its citizens, stifling dissent and allowing the government to shape public opinion and views of foreign countries such as the United States.
- The use of legislation and the imprisonment of journalists, especially Chinese employees of foreign media, have led the Chinese media to "self-censor" to avoid prosecution. The U.S. government, media, and businesses are unable to obtain basic economic, market, demographic, agricultural, and political information.
- The Chinese government filters the Internet, using regulation, software, and hardware to prevent citizens from obtaining access to information it deems unacceptable, as well as information from foreign media sources. Internet-related U.S. companies that wish to do business in China are forced to choose between complying with Chinese regulations that limit free speech, or not entering the Chinese market at all.

In an ongoing effort to maintain its hold on power, promote nationalism, limit access to a free press, and stifle dissent, China has been increasing its control over media and information flows, including the Internet. Through this control and manipulation, the Chinese government shapes public opinion, including public opinion regarding Taiwan and the United States. This creates misunderstanding and can induce public protests against foreign countries. The Commission remains concerned about the long-term effects of these practices on the way that Chinese citizens who are subjected to manipulated and highly controlled information view the United States and other democratic nations.

In April 2006, the State Department complained about increased Chinese censorship and abuse of China's journalists by the Chinese government.[1] This is supported by a leading journalists' rights group, Reporters Without Borders, that noted, "Faced with growing social unrest, the [Chinese] government has chosen to impose a news blackout. The press has been forced into self-censorship, the

Internet purged, and foreign media kept at a distance."[2] The censorship crackdown is so severe that a group of retired, senior Chinese officials openly complained about media censorship and the closing of an investigative newspaper.[3]

To achieve its objectives, China employs an army of censors who, on a daily basis, notify Chinese editors about topics that are prohibited that day.[4] Censors will have increasing power if a new law passes that permits a $17,000 fine for those reporting on public emergencies or "sudden events" without government approval.[5] Government harassment and abuse of journalists in China continues.[6] At the beginning of 2006, there were reportedly over 30 journalists imprisoned in China.[7] Chinese journalists with connections to foreign media are particularly vulnerable to government abuse.[8] For example, despite being arrested in September 2004, *New York Times* researcher Zhao Yan was not tried until August 2006. While the charge of disclosing "state secrets" was dropped, Zhao was still sentenced to three years on a fraud charge.[9] The same week, Ching Cheong, a correspondent for Singapore's *The Straits Times*, also was sentenced to five years in prison for selling "state secrets" to Taiwan.[10]

The Chinese central government is particularly active in censoring foreign media. In April 2006 China renewed a law banning television stations from broadcasting foreign news footage without prior screening.[11] China also prohibits the import of foreign political publications and earlier this spring banned the U.S.-based magazine *Rolling Stone*. In addition, the Chinese government jams the radio transmissions from the Voice of America and the Chinese-language service of Radio Free Asia.[13] Complaints filed through the U.S. Federal Communications Commission to the International Telecommunications Union have met with no success in stopping the interference.[14]

In early September 2006, Xinhua, the Chinese state news agency, promulgated new measures that require foreign news agencies to have their information approved through Xinhua before it can be released to other Chinese media. Furthermore, foreign media must use only entities approved by Xinhua as their agents in China. These measures effectively make the state news agency the gatekeeper for foreign media reports entering China.[15]

As Internet use has burgeoned in China, the government's efforts to censor and control its use have increased dramatically for the same reasons China censors the traditional media: preventing foreign and domestic criticism and stifling organized protests. In 2005, 111 million Chinese went on-line, making it the second largest Internet-using country.[16] However, the Chinese government censors the Internet both by filtering it for "key words" it finds unacceptable and by blocking entire Web sites.[17] Both access to Web sites potentially critical of the government that are run by other governments, human rights organizations, or political groups, and Internet content are restricted in China by the world's most sophisticated Internet censorship force. Blocked sites have included those operated by the British Broadcasting Corporation, Voice of America, Radio Free Asia, and *The New York Times*.[18]

According to the Open Net Initiative, "China operates the most extensive, technologically sophisticated, and broad-reaching system

of Internet filtering in the world. The implications of this distorted on-line information environment for China's users are profound, and disturbing."[19] Techniques used to disrupt Internet access include using routers and software to block or disrupt connections to sensitive sites and discussion boards,[20] imposition of burdensome licensing requirements, and harsh enforcement of prohibitions that prompts self-censorship.[21] Internet service providers, as a condition of operating in China, must retain personal data on their subscribers such as their phone numbers, sites they viewed, and the amount of Internet time they used, and provide that information to the Chinese government when requested to do so.[22]

The role of U.S. companies in China's Internet censorship efforts has been widely discussed since Google introduced a search engine, Google.cn, for the Chinese market. In order to operate this site in China, Google agreed to obey Beijing's censorship rules and in China eliminate search results the government identified as unacceptable.[23] Other U.S. companies also have cooperated with Beijing. In 2004 Yahoo provided Beijing with information about one of its email users who subsequently was jailed for leaking government information to a pro-democracy group in New York.[24] In December 2005, Microsoft, at Beijing's request, removed the postings of a free-speech advocate, Zhao Jing, from its blogging service.[25] American technology firms also have sold hardware to China for use in monitoring or filtering the online activities of its citizens.[26]

U.S. Responses and Initiatives

In response to Chinese attempts to limit access and filter the content of the Web sites of U.S.-sponsored programs such as Voice of America and Radio Free Asia, the U.S. Broadcasting Board of Governors has devised a "push-pull" system. Mr. Kenneth Berman of the Board described the "push" as e-mails designed to pass through Chinese e-mail censoring software, sent to "those users in China who would find the news interesting, useful, or a necessary complement to the official, approved news stories."[27] The "pull" consists of a link inside the e-mail to a "proxy site," one that is not yet filtered by Chinese Internet controls, yet provides access to the Voice of America and Radio Free Asia Web sites and, if so desired, then on to any other site in the world.[28]

During the 109th Congress, several bills were introduced in the House that propose establishment of an office within the U.S. government to monitor global Internet freedom, prepare an annual report on countries that restrict their citizens' access to the Internet, and prohibit U.S. businesses from allowing Internet filtering or exporting filtering-related technologies. Some of the bills also establish civil and criminal penalties for assisting Internet-filtering countries.[29]

In February 2006, Secretary of State Condoleezza Rice established the Global Information Freedom Task Force, an interagency group that considers foreign policy aspects of Internet freedom and the impact of censorship on U.S. companies, and that makes recommendations to the Secretary on policy and diplomatic initiatives that maximize access to the Internet while minimizing foreign government efforts to block information.[30] The Task Force's second

meeting focused on the challenges to Internet freedom in China among other countries.[31]

RECOMMENDATIONS

- The Commission recommends that Congress urge the Administration to demand that China stop jamming Voice of America and Radio Free Asia broadcasts, and to instruct its officials to raise the issue of media and Internet freedom in meetings with their Chinese counterparts and to remind those counterparts that jailing journalists for publishing information China finds distasteful only draws negative attention from the international community.
- The Commission recommends that Congress prohibit disclosure by U.S. companies to the Chinese government, in the absence of formal legal action by the Chinese government, of information about Chinese users or authors of online content. Congress should require that where a U.S. company is compelled to act, it shall inform the U.S. government. A compilation of this information should be made publicly available semi-annually.
- The Commission recommends that Congress expand support for both the Broadcasting Board of Governors' program for circumventing Chinese Internet censorship and the U.S. State Department's Global Internet Freedom Task Force.

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THE COMMISSION'S RECOMMENDATIONS

Chapter 1 — The U.S.-China Trade and Economic Relationship

Currency manipulation

1. The Commission recommends that Congress urge the Administration to take to the World Trade Organization (WTO) and the International Monetary Fund (IMF) a complaint about China's manipulation of its currency. This manipulation contravenes both the letter and the spirit of WTO rules and the IMF charter.
2. The Commission recommends that Congress pass legislation to modify the requirements of the Treasury Department's biannual report on countries that practice currency manipulation, by making it clear that countries that artificially peg their currency in order to gain an export advantage should be identified as violating the principles of international trade. The Commission also recommends that Congress eliminate the requirement that a country must be running a global trade surplus to be designated a currency manipulator.[1]
3. The Commission recommends that Congress enact legislation to define currency manipulation and loan forgiveness as illegal export subsidies subject to countervailing duty penalties levied against an offending country's exports.
4. The Commission recommends that Congress pass legislation to allow the U.S. Department of Commerce to impose countervailing duties against non-market economy subsidies. (Although current U.S. practice does not allow such duties to be imposed against non-market economies, such actions are permitted by the WTO.)

Accounting integrity

5. The Commission recommends that Congress direct the Treasury and Commerce Departments to examine how the collection of data regarding foreign investment in the United States can be improved, placing particular emphasis on the feasibility of tracking how foreign central banks invest their reserves in dollar denominated assets.

[1] China currently is running a large global current account surplus. The International Monetary Fund estimates China's global current account surplus will be $184 billion in 2006, having surged from $68.7 billion in 2004 and $160.8 billion in 2005. In the 1990's, however, China ran far smaller surpluses and even a deficit in 1993. This recommended change would allow the Treasury Department to designate China as a currency manipulator even during a year when China's current account is in balance or in deficit.

6. The Commission recommends that Congress encourage the executive branch to protest any Chinese restrictions on the free flow of financial information.

7. The Commission recommends that Congress urge the executive branch to open negotiations with China to secure approval for foreign credit reporting agencies to provide uncensored ratings of all Chinese securities, and to obtain Chinese central government agreement that Chinese regulators will drop licensing and regulatory requirements that dictate criteria for the hiring of ratings analysts.

Dispute resolution

8. The Commission recommends that Congress urge the U.S. Trade Representative to press ahead aggressively with a WTO case against China for its manifest failures to enforce intellectual property rights, selecting the best of many potential cases in order to establish a strong precedent, and that Congress urge the U.S. Trade Representative to enlist other nations to join in the case.

9. The Commission recommends that Congress monitor the recent steps taken to strengthen and enlarge the international trade law enforcement office within the Office of the U.S. Trade Representative and, if the Representative needs additional resources to investigate and prosecute dispute settlement cases before the WTO, that Congress provide those resources.

10. The Commission recommends that Congress direct the Administration to increase the number of intellectual property attachés in China from the Office of the U.S. Trade Representative, the U.S. Patent and Trademark Office, and the Departments of State, Commerce, Justice, and Homeland Security, and provide sufficient funding to the parent agencies to support these additional attachés.

Fair trade

11. The Commission recommends that Congress urge the U.S. Trade Representative to strengthen its annual review of China's compliance with WTO rules by adding conclusions and recommendations to its report. (Congress instituted the requirement that the Representative prepare this report when it granted China permanent normal trade relations as part of China's admission to the WTO.)

Criminal penalties for intellectual property rights violations

12. The Commission recommends that the U.S.-China Interparliamentary Exchange raise with the National People's Congress the need to lower the threshold for criminal prosecutions of Chinese intellectual property rights violation cases.

Chapter 2 — China's Global and Regional Activities and other Geostrategic Developments

China's regional activities

13. The Commission recommends that Congress urge the Administration to seek direct dialogue and cooperation with China with regard to securing a resolution to the conflict in the Darfur region of Sudan that will halt the genocide occurring there and provide security and basic human rights for the affected population. Congress should instruct the Administration to report semiannually on China's actions in Sudan and any progress that has been made through dialogue with China.

14. The Commission recommends that Congress encourage the Administration to intensify engagement with Latin American nations in light of expanding Chinese interests in the region.

15. The Commission recommends that Congress encourage the Administration to seek observer status for the United States in the Shanghai Cooperation Organization and that Congress also encourage the Administration to monitor closely Iran's participation in this organization.

16. The Commission recommends that in response to China's efforts to isolate Taiwan, Congress encourage the Administration to implement a long-term policy to facilitate Taiwan's participation in international organizations and activities for which statehood is not a prerequisite, such as the World Health Organization, the Community of Democracy, the Proliferation Security Initiative, and other multilateral public health, counterproliferation, counterterror, and economic organizations as appropriate. Congress should instruct the Administration to report annually on its actions to ensure that Taiwan is not isolated in the world community.

17. The Commission recommends that Members of Congress, when visiting mainland China, also visit Hong Kong, and that Congress encourage senior Administration officials, including the Secretary of State, to make visits to Hong Kong part of their travel to China.

18. The Commission recommends that Congress extend the reporting requirements in Section 301 of the United States Hong Kong Policy Act of 1992, P.L. 107–115, 22 U.S.C. 5731, for five more years.

China's proliferation and involvement in North Korea's and Iran's nuclearization activities

19. The Commission recommends that Congress urge the Administration to seek high-level dialogue with China intended to obtain strengthened and expanded nonproliferation commitments and activities from China and, in particular, (1) to obtain China's agreement to participate in the Proliferation Security Initiative and the Illicit Activities Initiative; and (2) to

strengthen its export controls and their enforcement. Toward this end, the Commission recommends that Congress—

- direct the Administration to provide increased export control technical assistance to China, and
- appropriate funds to support that increased assistance.

20. The Commission recommends that Congress urge the Administration to seek agreement with China to carry out inspections at sea of ships bound to or from North Korean ports and establish a U.S.-China joint operation to inspect for contraband all shipping containers being moved to or from North Korea when they pass through Chinese ports, in fulfillment of the obligations under U.N. Security Council Resolution 1718 to prevent the sale or transfer of missiles, and nuclear and other weapons-related materials and technologies, to and from North Korea.

21. The Commission recommends that current sanctions against Chinese companies that proliferate equipment and technology related to weapons of mass destruction and their delivery systems be broadened and harmonized for increased effectiveness. The Commission recommends that Congress expand current sanctions regimes to extend penalties to the Chinese parent company of a subsidiary that engages in proliferation activities, regardless of the parent company's knowledge of or involvement in the problematic transaction. Access to U.S. markets (including capital markets), technology transfers, and U.S. government grants and loans should be restricted from proliferating companies and their Chinese parent companies and related subsidiaries irrespective of the related firms' knowledge of the transfers in question.

22. The Commission recommends that Congress instruct the Administration to insist that China fulfill its obligations under U.N. Security Council Resolutions 1695 and 1718 and take more significant measures to denuclearize the Korean peninsula and counter North Korean proliferation activities. The Congress should further instruct the Administration to report semiannually about specific actions the Chinese government has taken in this regard.

23. The Commission recommends that Congress instruct the Administration to engage in a strategic dialogue with China and report to Congress the specific actions that China is taking concerning (1) its past and current proliferation activities to Iran; (2) its public stance in support of Iran's nuclear energy program; and (3) the impact of Iran's secondary proliferating transfers, and to encourage Middle Eastern and European states to seek to persuade China's government to act more responsibly and diligently to curb Chinese proliferation to Iran.

China's energy needs and strategies

24. The Commission recommends that Congress support the Administration's current policy dialogues and technical exchanges with China pertaining to energy, and urge the Ad-

ministration to seek additional opportunities for the United States to assist China to increase energy efficiency, reduce pollution from energy consumption, and facilitate the use of alternative fuels.

25. The Commission recommends that Congress obtain detailed information on the nature, specific sources, and extent of China's air pollution, and its detrimental effects both in China and in the rest of the world, with specific attention to the effects in the United States.

Chapter 3 — China's Military Power and its Effects on American Interests and Regional Security

China's military modernization

26. The Commission recommends that Congress direct the Administration to engage in a strategic dialogue with China on the importance of space surveillance, the military use of space, and space weapons. Such a dialogue should include strategic warning and verification measures.

27. The Commission recommends that Congress instruct the Director of National Intelligence, working with the Department of Defense, to formulate and establish a more effective program for assessing the nature, extent, and strategic and tactical implications of China's military modernization and development.

28. The Commission recommends that Congress require the Department of Defense to include in its annual report to Congress on China's military power an assessment of U.S. weapons systems, force structure, basing, doctrine, and tactics in order to maintain a favorable balance of military power in the region and to ensure U.S. forces will prevail as rapidly and effectively as possible in the event of a conflict with the Chinese military over Taiwan or other interests in the Asia-Pacific region.

U.S. export controls

29. The Commission recommends that Congress enact a new Export Administration Act to clarify U.S. export control policy and the U.S. approach to multilateral export control regimes. The new legislation should take into account new and emerging national security threats, unique U.S. technological advances, and global trade developments since the expired Export Administration Act was enacted in 1979. It also should establish strengthened penalties against violators.

30. The Commission further recommends that Congress encourage the Administration, as it reviews U.S. export controls aimed at China, to engage in substantive discussions with U.S. companies and business groups with the objective of avoiding the imposition of unnecessary export burdens that do not appreciably enhance U.S. security interests.

31. The Commission recommends that Congress urge the Administration to engage in more vigorous diplomatic activity at high levels in order to obtain multilateral cooperation necessary for effective global export controls.
32. The Commission recommends that Congress provide adequate funding to support an increase in the number of initial and periodic follow-up end-use/end-user verification visits for exports licensed to China and Hong Kong. This should include increasing the number of qualified, Mandarin-speaking export control officers stationed in China and Hong Kong.
33. The Commission recommends that Congress encourage the Administration to discuss with key allies the establishment of a multilateral arrangement to ensure post-shipment verification of the status of certain sensitive technologies exported to China.

The military balance across the Taiwan Strait

34. The Commission recommends that Congress urge the Administration to encourage Taiwan's Legislative Yuan to approve the purchase of the remaining components of the arms package offered by the United States in April 2001, or alternative systems that will enhance Taiwan's defense capability, and that additional arms requests from Taiwan be considered by the U.S. government on their merits.

Protection of government computers from espionage

35. The Commission recommends that Congress examine the federal procurement process to ensure that all agencies consider security measures when purchasing computers.

Chapter 4 — A Case Study of the Automotive Industry that Illustrates Challenges to U.S. Manufacturing and the U.S. Defense Industrial Base

36. The Commission recommends that Congress support the Administration's WTO dispute resolution case against China's proposed imposition of a 25 percent tariff on imported auto parts.
37. The Commission recommends that Congress fully fund programs such as the Commerce Department's Manufacturing Extension Partnership Program (a nationwide network of expertise and advice to aid small and medium-sized American manufacturers) that provide counsel on such matters as worker training, process technology, information technology, and supply chain integration to help U.S. manufacturers compete globally.[2]

[2] Although the Manufacturing Extension Partnership Program is not explicitly discussed in the text of this report, it was an issue reviewed during the Commission's July 17 hearing in Dearborn, Michigan. U.S.-China Economic and Security Review Commission, *Hearing on China's Impact on the U.S. Auto and Auto Parts Industry*, testimony of Laurie Moncrieff, July 17, 2006.

38. The Commission recommends that Congress require the U.S. Department of Defense to trace the supply chains of all components of critical weapons systems.

Chapter 5 — China's Internal Problems, Beijing's Response, and Implications for the United States

39. The Commission recommends that Congress encourage U.S. companies to work with their Chinese suppliers to improve China's environmental, labor, and safety standards, which would address some of the causes of unrest facing the Chinese government.
40. The Commission recommends that Congress encourage American nongovernmental organizations and the State Department to promote new and existing efforts to support independent Chinese nongovernmental organizations, especially those working on rule of law, healthcare, workers' rights, and environmental issues.
41. The Commission recommends that Congress instruct the Administration to promote new and existing cooperative efforts with China that improve China's responses to transnational problems, including infectious diseases and the environment.

Chapter 6 — China's Media and Information Controls

42. The Commission recommends that Congress urge the Administration to demand that China stop jamming Voice of America and Radio Free Asia broadcasts, and to instruct its officials to raise the issue of media and Internet freedom in meetings with their Chinese counterparts and to remind those counterparts that jailing journalists for publishing information China finds distasteful only draws negative attention from the international community.
43. The Commission recommends that Congress prohibit disclosure by U.S. companies to the Chinese government, in the absence of formal legal action by the Chinese government, of information about Chinese users or authors of online content. Congress should require that where a U.S. company is compelled to act, it shall inform the U.S. government. A compilation of this information should be made publicly available semi-annually.
44. The Commission recommends that Congress expand support for both the Broadcasting Board of Governors' program for circumventing Chinese Internet censorship and the U.S. State Department's Global Internet Freedom Task Force.

ADDITIONAL VIEWS OF COMMISSIONERS GEORGE BECKER, C. RICHARD D'AMATO, THOMAS DONNELLY, KERRI HOUSTON, PATRICK A. MULLOY AND MICHAEL R. WESSEL

This year marks the 5th anniversary of China's accession to the World Trade Organization and the granting of permanent normal trade relations by Congress. By almost any measure, the promises made by China and the arguments offered by proponents of Congress' decision to end the annual Most Favored Nation debate have proven spurious. China increasingly threatens our national and economic security interests. The current approach is failing to meet our core objectives. The status quo approach must be changed.

Ending the annual Most Favored Nation debate was touted as a path to greater openness, democracy and freedom in China. The record proves the emptiness of these claims. China's communist leaders continue to hold their citizens' rights hostage to the leadership's desire to maintain and increase power. The communist leadership continues to govern virtually every aspect of the people's daily lives from child bearing to religious observance to how they may express their opinions to their friends and neighbors. As the Internet has flourished so has the Chinese leaders' desire to contain it: More than 30,000 Internet cops observe the electronic musings, postings, communications and e-mail of their citizens.

Workers' rights are controlled with an iron fist. Even in rapidly expanding areas, where labor demand has increased, the ability of workers to fully share in the fruits of their labors is almost nonexistent. A formal filing on workers' rights abuses with the Bush Administration's USTR documented broad workers rights violations, including how many workers were never paid substantial percentages of their wages.

And, we now see that U.S. business interests who claimed that they would be agents of change in China are, in fact, fighting efforts to promote workers rights' in that country.

China continues to drag its feet, or completely ignore the commitments it made as part of its accession agreement to the WTO. It continues its massive subsidies to ensure the development and success of its companies. And, while many said that China's comparative advantage would be limited to low-value, high labor content products like toys and textiles, China has proven to be a fierce competitor all up and down the economic food chain. Today, the United States runs a huge deficit in advanced technology products with China in some of the areas that, just a few years ago, were viewed as the shining opportunity for America's future.

PNTR proponents claimed that the vast Chinese market would provide enormous opportunities for U.S. companies to sell and service the expanding Chinese consumer market. Here, too, the promises have fallen way short. Few profits are being made selling into the Chinese market. The profits come from exporting back to America. Almost 60% of the products China sells to the U.S. come from foreign-invested companies. China has proven to be more of a site for U.S. products to be "industrial tourists"—component products

sent there by U.S. companies only to be assembled into the final products that are shipped right back to our shores.

China is more interested in having our companies share their technology and their production prowess than they are in them reaping profits. And, they're willing to get our technology by whatever means—legal or illegal.

China continues to expand its economic infrastructure to expand its capabilities as a production and export powerhouse. In steel, in autos and in many other areas, China is rapidly expanding its production capacity despite a global glut of overcapacity in many of these products. China is only further exacerbating the precarious economic position many American producers already face. Within a few years, China will send finished autos to the U.S. as its production capacity will exceed its domestic demand by almost 100 percent. An industry that is already on the ropes here in the U.S. with broad scale plant closures and workers thrown out of work will face further decline. Our steel sector continues to face rampant dumping and predatory efforts of the Chinese.

The limited and mostly one-sided economic benefits from China's entry into the WTO are irrefutable.

The Commission is tasked with reviewing both the economic and security interests of the United States vis-a-vis China as well as the interrelationship between these two issues. As in previous years, the Commission's work has shown that our national and economic security are inextricably linked and that China's actions threaten our own interests.

Around the globe, China has sought to capture natural resources so as to fuel its manufacturing sector. The result has been China's willingness to embrace the leadership of countries whose actions and activities are adverse to our own. For example, in Sudan China provides the weapons and support for those committing genocide. In Iran, Chinese companies have proliferated weapons and missile technology to a country that, many believe, is engaged in a nuclear weapons development program. Other countries benefit as well.

The Bush Administration has noted that China's military build-up raises serious questions in terms of its intended use. The size of its military, its capacity and its modernization is expanding rapidly. Without adequate justification for its activities, we are left only to guess as to their ultimate targets.

China is a great nation with a great people. Our goal should be to seek mutual advancement to enhance the lives and opportunities for the Chinese people, and our own as well. The two are not mutually exclusive. Unfortunately, our current policies rely on outdated, failed theories rather than realistic, honest approaches. And, the status quo approach has only strengthened China's communist leadership's power and hold on the people.

Our nation's policy of engagement must be updated to adhere to the reality of the competition and the approach that China's leaders have taken. We still have enormous leverage—leverage that, to date, we have largely refused to use. And, our leverage declines as our dependence on China increases.

Now is the time for us to review the lessons of past years and admit that a serious course correction is necessary. We need a policy that puts the interests of the American people first.

ADDITIONAL VIEWS OF COMMISSIONER PATRICK A. MULLOY

I was pleased to sign onto the Commission's 2006 Report and the additional views of Commissioner George Becker. The unanimously adopted Report and those additional views speak for themselves.

There is an issue about which I want to comment briefly because it illuminates the underpinnings of our present trade and economic policies toward China. It is implicit in the Report but I want to state it explicitly. The interests of the U.S.-based multinational corporations, which have done so much to influence our current policies toward China, are often not aligned with the broader interests of our nation. This is not because they have malevolent intent. It is a systemic problem for which we must develop a public policy response. These corporations, as they are charged to do in our economic system, are focused on "shareholder value." They are not charged to consider the larger impact of their decisions on the American economy and workers, and the impetus they give to China's growing international, political, and military strength.

China was, for many centuries, one of the premier economic powers in the world. In the early 19th century, due in some measure to China's engagement with the Western powers, its economy and society went into decline. The Communist Party gained power in China in 1949 in part, because it championed an ideology that explained why China's competitive decline had taken place, and offered a collectivist-based economic policy as a remedy.

That economic policy failed to produce the desired economic growth; and in 1978, a few years after the death of Mao Tse Tung, it was drastically reformed. A key part of the new economic reform program adopted under Deng Xiaoping consisted of attracting foreign capital, technology, and know-how to help build China's economy. China wanted that strong economy not only to raise the standard of living of its people, but also as a base on which to build what the Chinese describe as their "comprehensive national power."

China has instituted economic incentives, including subsidies and an underpriced exchange rate, to induce foreign companies including U.S. multinational corporations to increase their "shareholder value" by transferring production facilities and technology to China. There they can achieve higher profits by producing goods for sale back to the United States and to other markets. Such incentives are part of China's "export led growth strategy."

As this Report makes clear, the Chinese strategy contributes to the imbalance in our economic and trade relationship, and to the erosion and offshoring of America's manufacturing and technology base. America's corporations may achieve short-term increases in shareholder value by cooperating with such a strategy, but overall the situation poses a long term threat to America's economic primacy and even our national security as we lose skills and capacities essential to our defense industrial base.

America's policymakers must understand that the interests of the multinational corporations and the policies they advocate toward China are not necessarily serving the larger interests of our citizens and our nation. Many of the findings in this Report are de-

signed to give our elected representatives a better understanding of China's export-led growth strategy and the Report's recommendations advocate some new tools to build a relationship with China that begins to serve our larger national interests. I feel fortunate to have been part of the bipartisan group that worked with a very capable staff to produce it.

ADDITIONAL VIEWS OF COMMISSIONER WILLIAM A. REINSCH

I voted in favor of this year's report, as I did in 2004, again as much because of what is missing as because of what is there. The report avoids some of the flights of semi-hysterical rhetoric that have plagued it in the past as well as many of the poorly conceived recommendations made in past years. (Our decision not to include recommendations from previous reports, on the grounds that they remain in force and do not need to be repeated, has made my decision easier. They may still be "in force," but since I doubt anyone remembers them, we can let them muddle about in the obscurity they deserve.)

Overall, the Commission continues to slowly lurch towards credibility, taking a modest step forward with this report. We continue our impressive record of thorough, balanced, hearings with expert witnesses from the government and the private sector. That body of work provides an in depth set of studies on topics important to the bilateral relationship, and the hearing records contain significant amounts of data and other information of use to scholars and policy makers. Some of that scholarship is highlighted in this report, but since the Commission has continued its practice of selective quotation, researchers should review the full hearing records in addition to this report to get the full picture of our work.

Particularly noteworthy this year are the report's sections on the Chinese financial system and its government's energy policies. At the same time, we have missed opportunities to delve more deeply into other important issues. For example, while I welcome the chapter on China's internal problems, we have used it more to produce a litany of China's domestic failures than as an opportunity to study the impact of those failures on China's future and on the bilateral relationship. The result is that it amounts to one more among many lists of complaints rather than a chance to advance our understanding of what motivates and guides Chinese actions.

On the negative side, the report once again treats China as an economic and security threat in everything but name, implying a number of apocalyptic outcomes—to our manufacturing base, our economy generally, to Taiwan, to our role in the Pacific—if we don't get busy countering their actions. In doing so, the Commission once again demonstrates its gift for making the complex far too simple. Everything bad happening to America is not China's fault, and even if China takes actions the Commission favors, such as revaluing its currency, our problems will largely remain.

Nowhere is this analytical problem more obvious than in the case study of the automobile industry. While the Chinese are clearly using subsidies and other industrial policy tactics of doubtful WTO-legality to advance their industry, with significant exports some years away, it is hard to argue that they are the primary cause of the U.S. industry's current problems. I certainly agree that we should pursue our WTO rights in this sector, as we are doing, and that we should expand our efforts to persuade China to pursue more market-oriented policies, but even so, the fate of the U.S. auto industry ultimately hinges on what we do here in the United

States to enhance our industrial and technological competitiveness. The Commission's mandate does not permit us to delve too deeply into those broader issues, but we can certainly do a much better job of acknowledging their primacy rather than simply complaining that China is pursuing policies which hurt us, even if they are, for China, rational.

One related area where the Commission is on the right track is its effort to identify the impact of Chinese policies on our defense industrial base. While the argument is not thoroughly proved here—and while the solutions lie in our domestic policies—it is an important issue to pursue which will, I hope, be the subject of further work next year.

There are a number of areas where I specifically disagree with the Commission majority—the recommendation concerning corporate parent liability, the comments on the relationship between American Internet service providers and the Chinese government, the lack of a more forceful recommendation on military-military contact, some of the language on Taiwan, among others—but they are fewer than in past years, and I will not dwell on them here.

Finally, as in past years, the report suffers from hubris—in this case the idea that American policies and goals are inevitably superior and that nations which do not adopt them deserve condemnation. That attitude ignores our own shortcomings, where we do not always measure up to our own standards, and it also ignores the fact that behavior we do not like might nonetheless be rational from the other nation's perspective, particularly in light of its current stage of economic and political development. Our insistence that China pursue open market and free trade policies, for example, conveniently ignores the fact that it took the United States more than 150 years to decide those were the right policies, and even now we still fall short.

We do the relationship a disservice when we define progress in terms of what is good for us or some higher principle. While I support encouraging China to be a responsible stakeholder, we should understand first that being such does not always mean simply agreeing with the United States, and second that our most persuasive arguments with the Chinese have consistently been our explanations of why a particular action is good for them rather than why it is good for us or the system we defend. It is not clear from this report that the Commission has really absorbed that lesson.

China, as I have said in earlier reports, is a work in progress, and while its progress is from our point of view insufficient—a view I share—it nonetheless is moving forward, and we make further progress less likely if we fail to note that.

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 (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 (enacted Nov. 22, 2005) (regarding responsibilities of Commission and applicability of FACA).

§ 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 ap-

pointed 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 Review 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.

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 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.—Not withstanding 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 Sates-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].

FACA Provisions

Additional Information:

Duration: The Commission will exist as long as Congress sees fit.

Costs: The Commission's FY 2006 appropriation from Congress is $3.0 million. The Commission expects to use this funding to support its objectives. Estimated man-hours to support the Commission's objectives in 2006 are 45,000.

Number of hearings and meetings: It is estimated that the Commission will hold eight to twelve hearings in 2006. It is estimated that the Commission will receive five classified intelligence briefings, hold six meetings to discuss administrative matters, hold five non-hearing information-gathering sessions, and hold between five and ten meetings relating to the preparation of the Commission's Annual Report. This tentative schedule is subject to change based on changing circumstances.

APPENDIX II

BACKGROUND OF COMMISSIONERS

Larry M. Wortzel, Ph.D., Chairman

Chairman Larry M. Wortzel was appointed to the U.S.-China Economic and Security Review Commission on November 9, 2001, and reappointed on January 4, 2005, by House Speaker Dennis Hastert for a two-year term expiring December 31, 2006. He was unanimously approved as Commission Chairman for the 2006 Report Cycle on February 2, 2006.

He previously served as the Director of the Asian Studies Center and vice president for foreign policy at the Heritage Foundation. A leading authority on China, Asia, national security, and military strategy, Chairman Wortzel joined Heritage in November 1999 upon completing a distinguished thirty-two-year career in the U.S. armed forces. His last military position was as director of the Strategic Studies Institute of the U.S. Army War College.

Following three years in the Marine Corps, Chairman Wortzel enlisted in the U.S. Army in 1970. His first 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 Infantry Officer Candidate School, as well as both Airborne and Ranger schools. After serving four years as an infantry officer in Korea and at Fort Benning, Georgia, he shifted to military intelligence. Wortzel traveled regularly throughout Asia while serving in the U.S. Pacific Command as a political-military affairs analyst 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. In addition, for the Army Intelligence and Security Command, he managed programs to gather foreign intelligence.

From 1988 to 1990, Chairman Wortzel was Assistant Army Attaché at the U.S. Embassy in China. After assignments as an Army strategist and managing Army intelligence officers, he returned to China in 1995 as the Army Attaché. In December 1997, he became a faculty member of the U.S. Army War College. He retired from the Army as a colonel.

Chairman Wortzel's books include *Class in China: Stratification in a Classless Society* (Greenwood Press, 1987), *China's Military Modernization: International Implications* (Greenwood, 1988), *The Chinese Armed Forces in the 21st Century* (Carlisle, PA, 1999), and *Dictionary of Contemporary Chinese Military History* (Greenwood, 1999). He regularly publishes articles on Asian security matters.

A graduate of the Armed Forces Staff College and the U.S. Army War College, Chairman Wortzel earned his B.A. from Columbus College, Georgia, and his M.A. and Ph.D. from the University of Hawaii. He and his wife, Christine, have two married sons and two grandchildren.

Carolyn Bartholomew, Vice Chairman

Vice Chairman Carolyn Bartholomew was reappointed to the U.S.-China Economic and Security Review Commission on December 17, 2005, by House Democratic Leader Nancy Pelosi for a two-year term expiring December 31, 2007. Ms. Bartholomew was unanimously elected as the Commission's Vice Chairman on December 21, 2005 for the 2005-2006 Report Cycle.

Vice Chairman Bartholomew worked at senior levels in the U.S. Congress, serving as long-term Counsel, Legislative Director, and most recently, Chief of Staff, to U.S. House of Representatives Democratic Leader Nancy Pelosi. She also served as a Professional Staff Member on the House Permanent Select Committee on Intelligence. Previously, she was 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, focused primarily on trade, human rights, and the proliferation of weapons of mass destruction. Commissioner Bartholomew was a lead staff on legislation to establish the Department of Homeland Security and led efforts in the establishment and funding of global AIDS programs and the promotion of human rights and democratization in countries around the world. Commissioner Bartholomew 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 received her B.A. from the University of Minnesota, an M.A. in anthropology from Duke University, and J.D. from Georgetown University Law Center. She is a member of the State Bar of California.

George Becker

Commissioner George Becker was reappointed for a third term to the U.S.-China Economic & Security Review Commission by Democratic Leader Nancy Pelosi on December 17, 2005 for a two-year term expiring December 31, 2007. He previously served on the Commission as a member beginning February 2001 through December 2005.

A second-generation steelworker, Commissioner Becker grew up across the street from Granite City Steel in Illinois, where he went to work with an open-hearth labor gang at age fifteen during the summer of 1944. From that beginning, Commissioner Becker rose through the ranks until being elected in 1993 and again in 1997

for two terms as the sixth international president of the United Steelworkers of America (USWA), representing 750,000 industrial workers in the U.S. and Canada.

Prior to being named to the Commission, Commissioner Becker completed a congressional appointment on the U.S. Trade Deficit Review Commission in 2000. He also served appointments during the Clinton administration to the President's Export Council and the U.S. Trade and Environmental Policy Advisory Committee. As an AFL-CIO vice president and executive council member, Commissioner Becker chaired the national labor federation's powerful Economic Policy Committee. He was a leader in the 1995 revitalization of the AFL-CIO that elected John Sweeney as the current president.

Commissioner Becker was elected two terms in 1985 and 1989 as the USWA's international vice president for administration. While vice president, he headed the union's organizing program and the Aluminum Industry Conference for collective bargaining. Among several corporate campaigns he led involving major labor disputes, the best known was against Ravenswood Aluminum Corp. that achieved the historic firing of 1,300 permanent scab replacement workers and the return to work of 1,600 steelworkers after a twenty-month lockout that ended in 1992.

His working class background includes employment as a crane operator at General Steel Castings and an assembler at General Motors' Fisher Body plant in St. Louis. After serving in the Marine Corps, Commissioner Becker became active in the USWA while an inspector at Dow Chemical's aluminum rolling mill in Madison, IL., where he was elected as the Local 4804 president. He was appointed a USWA staff representative in 1965, negotiating labor contracts and developing a reputation as an expert on occupational health issues. His interest in job safety took him to the union's Pittsburgh headquarters as a technician in the Safety and Health Dept.

He helped establish some of the first national health standards adopted by the U.S. Occupational Safety and Health Administration for workers exposed to lead, arsenic, and other toxic substances.

Commissioner Becker's USWA presidency has been marked by many major achievements, including a major restructuring of the USWA's regional districts and executive board; mergers of the 98,000-member United Rubber Workers in 1995 and the 40,000-member Aluminum, Brick and Glass Workers in1997; plus a successful twenty-eight-month worldwide campaign for a labor agreement and the return to work of 6,000 permanently terminated workers at Bridgestone/Firestone Corp.

He served as the executive committee member of the Geneva-based International Metalworkers Federation and chairman of the world rubber council of the International Federation of Chemical, Energy, Mine and General Workers' Unions in Brussels.

Daniel A. Blumenthal

Commissioner Daniel A. Blumenthal was appointed by Senate Majority Leader Bill Frist for a two-year term expiring December 31, 2007.

Daniel Blumenthal is a Resident Fellow in Asian Studies at the American Enterprise Institute for Public Policy Research. He is also president of Strategic Education and Research International, Inc., and a member of the Academic Advisory Group of the Congressional U.S.-China Work Group.

Previously, Mr. Blumenthal was senior director for China, Taiwan, and Mongolia in the Office of the Secretary of Defense for International Security Affairs from March 2004-November 2004 during the first George W. Bush administration. He developed and implemented defense policy toward China, Taiwan, Hong Kong and Mongolia, during which time he received the Office of Secretary of Defense Medal for Exceptional Public Service. From January 2002-March 2004, he was County Director for China, Taiwan and Hong Kong in the Office of the Secretary of Defense, International Security Affairs.

Before his service at the Department of Defense, Mr. Blumenthal was an Associate Attorney, Corporate and Asia Practice Groups at Kelley Drye & Warren L.L.P. Earlier, he was an Editorial and Research Assistant at the Washington Institute for Near East Policy.

Mr. Blumenthal received an MA in International Relations and International Economics from the Johns Hopkins University School of Advanced International Studies, and a J.D. from the Duke University School of Law in 2000.

Commissioner Blumenthal has written extensively on national security issues. He resides in Washington, DC with his wife and two children.

Peter T. R. Brookes

Commissioner Brookes was appointed by Speaker J. Dennis Hastert on January 25, 2006 for a term expiring December 31, 2007.

Peter Brookes is Senior Fellow for National Security Affairs at The Heritage Foundation. In addition, he is a weekly columnist on foreign policy, defense and trade issues for the New York Post. He frequently appears on TV and radio including FOX, CNN, MSNBC, CNBC, NPR and BBC. He is the author of: *A Devil's Triangle: Terrorism, Weapons of Mass Destruction and Rogue States*.

Before coming to Heritage, Mr. Brookes served in the George W. Bush administration as the Deputy Assistant Secretary of Defense for Asian and Pacific Affairs, where he was responsible for the development, planning, guidance and oversight of U .S. security and defense policy for 38 countries and 5 bilateral defense alliances in the Asia-Pacific region.

Prior to joining the Bush administration, Commissioner Brookes worked as a Professional Staff Member with the Republican staff of the Committee on International Relations in the U.S. House of Representatives focusing on East and South Asian affairs. He also served with the CIA's Directorate of Operations, focusing on global political affairs, arms control, and weapons proliferation. Just prior to his CIA service, he worked on international economic issues for the State Department at the United Nations, in the private sector in the defense industry and on active duty in the U.S. Navy.

Commissioner Brookes is currently pursuing a Doctorate at Georgetown University. He is a graduate of the U.S. Naval Acad-

emy (B.S., Engineering); the Defense Language Institute (Diploma, Russian); the Naval War College (Diploma, National Security and Strategic Studies); and the Johns Hopkins University (M.A., American Government).

Hon. C. Richard D'Amato

Commissioner C. Richard D'Amato was reappointed to the U.S.-China Economic and Security Review Commission by Senate Democratic Leader Harry Reid on October 5, 2005, for a two-year term expiring December 31, 2007. He served as the Chairman and Vice Chairman of the Commission beginning in April 2001, and was unanimously approved on July 19, 2004, to serve as the Commission Chairman for the 2004-2005 report cycle. He is an attorney, and a member of the Maryland and D.C. bars. He is a former delegate to the General Assembly of the State of Maryland, (1998-2002), representing the Annapolis, Maryland, region, and served on the Appropriations Committee. He is also a retired captain in the United States Navy Reserve, served two tours of duty in the Vietnam theatre aboard the USS KING (DLG-10), and three years as an Assistant Professor of Government at the U.S. Naval Academy. He served on the Trade Deficit Review Commission, a Congressional advisory body, as a member from 1999-2000.

From 1988-98, Commissioner D'Amato was the Democratic Counsel for the Committee on Appropriations of the United States Senate. He was responsible for coordinating and managing the annual appropriations bills and other legislation on policy and funding of U.S. defense, foreign policy, trade and intelligence matters. He served from 1980-88 as senior foreign policy and defense advisor to the Democratic Senate leader, Senator Robert C. Byrd. In this position, he supervised work on major foreign policy, national security and trade policies, and was the co-director for the Senate Arms Control Observer Group, a bipartisan leadership organization, which served as liaison with the White House on all arms control negotiations with the Soviet Union. He also served on the Senate delegation to the Kyoto negotiations on Global Warming.

Commissioner D'Amato began his career as Legislative Director for Congressman James Jeffords (Ind.-VT) from 1975-78, and then as Chief of Staff for Senator Abraham Ribicoff (D-CT) until 1980.

He has been active in other aspects of public service, having founded the annual Taste-of-the- Nation dinners in Annapolis as part of the nationwide "Share Our Strength" hunger relief organization, and created an annual scholarship for college bound African-American women in Anne Arundel County, Maryland. He currently serves on the boards of the Annapolis Symphony Orchestra, Annapolis Maritime Museum, The Johns Hopkins Cuba Exchange Program, and the University of Oxford Congressional Visitors program.

Commissioner D'Amato received his B.A. (cum laude) from Cornell University in 1964, and served on the Cornell Board of Trustee's Advisory Council. He received his M.A. from the Fletcher School of Law and Diplomacy in Boston in 1967, and received his legal education from Harvard Law School and from the Georgetown University Law Center (JD, 1980). He resides in Annapolis with his wife, Dee.

Thomas Donnelly

Commissioner Thomas Donnelly was appointed by Senate Majority Leader Bill Frist for a two-year term expiring December 31, 2006.

Thomas Donnelly is a senior adviser in the international security program at the Center for Strategic and International Studies and editor of Armed Forces Journal. He is also president of Strategic Education Associates. He writes about himself in the third person only reluctantly.

He has been a writer and expert on strategy and military affairs for nearly three decades. His career as a journalist began in 1978 at the Journal newspapers in the Washington, D.C. suburbs. Soon after, he joined the staff of *Army Times* and, in 1984, helped to create *Defense News*, assuming the post of deputy editor as well as writing about land warfare, defense strategy and politics. In 1987 he returned to *Army Times* as editor, a position he held through 1993. This was a period of great ferment in the U.S. military and in U.S. defense policy. It spanned the fall of the Berlin Wall and the collapse of the Soviet Union, the invasion of Panama, the Persian Gulf War of 1991 and the failed mission to Somalia in 1993; it also saw a significant reduction in U.S. armed forces and the beginnings of a fundamental reorientation of American national security strategy. In addition to directing the paper's coverage of these issues, Donnelly wrote major pieces on all of them.

In 1994, he was granted a master's degree in international relations from Johns Hopkins Paul H. Nitze School of Advanced International Studies. After a brief stint as executive editor of *The National Interest*, Donnelly joined the staff of the House Armed Services Committee as director of the policy group. In addition to crafting major pieces of legislation such as the laws directing the conduct of the 1997 and 2001 Quadrennial Defense reviews, the reform of the Defense Department's readiness reporting system and a variety of initiatives aimed at better understanding the emerging challenge presented by the People's Republic of China, Donnelly directed the committee's oversight efforts, notably regarding military readiness, operations in the Balkans and the Khobar Towers terrorist bombing of 1996.

In 1999, he joined the Project for the New American Century as deputy executive director. His major effort at the Project was serving as the principal author of Rebuilding America's Defenses: Strategy, Forces and Resources for a New Century. Donnelly came to the American Enterprise Institute in October 2002, after brief service as director of strategic initiatives for the Lockheed Martin Corporation. In addition to his think-tank work, Donnelly is president of Strategic Education Associates, a private consulting firm that conducts seminars and leadership development exercises for business executives and public officials. In 2004, he served as professor of national security studies at the Maxwell School of Public Administration and Syracuse University and in 2005 was nominated by Senate Majority Leader Bill Frist to serve a two-year term on the U.S.-China Economic and Security Review Commission, an advisory panel to the Congress. He became editor of *Armed Forces Journal* in September 2005.

At CSIS, he works on a wide variety of defense and national security issues, including projects on special operations forces, the domestic politics of defense as well as the Center's signature "Beyond Goldwater-Nichols" program. In addition, he will continue to work on his forthcoming book, *Sources of American Conduct: The Strategic Culture of the United States*.

Thomas Donnelly is author or co-author of four books, including *The Military We Need: Defense Requirements of the Bush Doctrine*, published in 2005; *Operation Iraqi Freedom: A Strategic Assessment*, published in 2003; *Operation Just Cause: The Storming of Panama, the definitive history of the 1989 invasion*; *Clash of Chariots: A History of Armored Warfare*; and the forthcoming *Sources of American Conduct: A Strategic History of the United States*. He has contributed essays to *Getting Ready for a Nuclear Iran*, a study by the Nonproliferation Policy Education Center; *The Obligations of Empire: United States' Grand Strategy for a New Century*, edited by James Hentz and published in 2003 by the University Press of Kentucky, and *Strategic Surprise: U.S.-China Relations in the Early Twenty-first Century*, published in 2003 by the Naval War College Press. His pieces also have appeared in *Foreign Affairs, The National Interest, The Weekly Standard, The Washington Post, The Wall Street Journal, USA Today, The Financial Times* and numerous other publications in the United States and abroad. He also has provided defense and national security commentary on television and radio to a huge variety of stations ranging from the major American networks, PBS and NPR to Al Jazeera. He lives in Bethesda, Maryland with his wife and two sons.

Kerri Houston

Commissioner Houston was appointed by Speaker J. Dennis Hastert on January 25, 2006 for a term expiring December 31, 2007.

Often referred to as "a force of nature" by fellow free market activists, Kerri Houston is a public policy analyst and expert in media, marketing and external relations for public policy institutes.

Ms. Houston is vice president of policy for Frontiers of Freedom (www.FF.org), advocating for free market solutions to a wide range of public policy reforms, political and national defense issues. She also serves as director of Frontiers' Lawsuit Abuse Reform Coalition and Project for the American Healthcare Century.

Ms. Houston is also President and CEO of Tacita Strategies Group LLC, a public affairs and consulting firm specializing in issue advocacy and stakeholder management.

Prior to joining Frontiers of Freedom, Ms. Houston was national field director for the American Conservative Union, executive director of State Policy Network, a member organization of free market state-based think tanks, and director of external affairs for the Institute for Policy Innovation.

Her responsibilities have included all facets of marketing, policy research and issue advocacy, as well as acting as liaison to Capitol Hill, the White House, state legislators, and other free market policy centers both in the U.S. and in Europe.

A strong proponent of individual and economic liberty, federalism, free trade and free markets, Ms. Houston lectures on pub-

lic policy and legislative issues and the proper role of government in civil society. She has worked internationally as a trainer for the International Republican Institute.

She is a Brain Trust columnist for *Investor's Business Daily*, and her opinion/editorials have appeared in *The Wall Street Journal*, *The Washington Times*, *The Dallas Morning News*, *Forbes magazine*, *Intellectual Ammunition,* and numerous other print, internet outlets and institutional publications throughout the country. She is a guest on talk radio nationwide, and a regular guest co-host on USA Radio Network's "Point of View." Ms. Houston is also a roundtable host of the TCI Cable program "America Outside the Beltway," was a frequent guest on Politically Incorrect with Bill Maher and has appeared on Fox, MSNBC and CNBC.

She is a member of the National Paycheck Protection Working Group, Director of Coalitions for the Republican Liberty Caucus, co-Chairman of Legislative Affairs for the North Texas Technology Council, and advisor to the Texas Conservative Coalition's Health and Human Services Task Force. She serves on the Board of Directors for GOPUSA.com, Citizen Outreach and sits on the Board of Advisors for The Project for California's Future.

She was also nominated to serve on the President's Commission to Strengthen Social Security.

Well known for her dedication to presenting public policy in a way that will "pass the dinner table test," Ms. Houston brings a sharp wit and a practical spin to her particular areas of expertise in fiscal, cultural and international policy.

Hon. Patrick A. Mulloy

Commissioner Patrick A. Mulloy was reappointed to the U.S.-China Economic and Security Review Commission on January 1, 2005, by the Senate Democratic Leader to a two-year term expiring on December 31, 2006. Commissioner Mulloy previously served as a member from April 2001 to January 1, 2005.

Prior to assuming his current responsibilities, Commissioner Mulloy was nominated by President Clinton and confirmed by the U.S. Senate as Assistant Secretary for Market Access and Compliance in the Department of Commerce's International Trade Administration, where he served from 1998 to 2001. In that position, Commissioner Mulloy directed a trade policy unit of over two hundred international trade specialists, which focused worldwide on removing foreign barriers to U.S. exports and on ensuring that foreign countries comply with trade agreements negotiated with the United States. This latter activity involved discussions both in the World Trade Organization (WTO) and with individual governments. He traveled extensively, meeting with foreign leaders to advance market-opening programs in the European Union, Eastern Europe, China, India, Taiwan, Indonesia, Canada, and Central and South America. He was also appointed by President Clinton to serve as a member of the Commission on Security and Cooperation in Europe.

Prior to his employment as Assistant Secretary, Commissioner Mulloy served fifteen years in various senior positions on the staff of the U.S. Senate Banking Committee, including Chief International Counsel and General Counsel. In those positions, he con-

tributed to much of the international trade and finance legislation formulated by the Committee such as the Foreign Bank Supervision Enhancement Act of 1991, the Export Enhancement Act of 1992, the Defense Production Act Amendments of 1994, and titles of the Omnibus Trade and Competitiveness Act of 1988 dealing with foreign bribery, exchange rates, international debt, and export controls.

Before coming to the Senate, Commissioner Mulloy served as a senior attorney in the Antitrust Division of the U.S. Department of Justice, where he directed a staff of lawyers and economists, which supervised participation by U.S. oil companies in the Paris-based International Energy Agency (IEA). In earlier duties at the Justice Department, he represented the United States in a variety of cases related to Federal environmental laws, including criminal and civil enforcement actions in various U.S. District Courts, several Circuit Courts of Appeal, and the U.S. Supreme Court.

Commissioner Mulloy began his public service career as a Foreign Service Officer at the U.S. Department of State, where he served in the Office of U.N. Political Affairs, the Office of International Environmental and Oceans Affairs, and as Vice Consul in the U.S. Consulate General in Montreal, Canada.

Commissioner Mulloy, a native of Kingston, Pennsylvania, holds an LL.M. from Harvard University Law School, a J.D. from George Washington University Law School, an M.A. from the University of Notre Dame, and a B.A. from King's College.

He presently serves as the Washington Representative of the Alfred P. Sloan Foundation and as an adjunct professor of international trade law at the law schools of both Catholic University and George Mason University. He periodically lectures on trade and financial matters at the National Defense University's Industrial College of the Armed Forces.

He resides in Alexandria, Virginia, with his wife, Marjorie, and they have three children.

Hon. William A. Reinsch

Commissioner William A. Reinsch was reappointed to the U.S.-China Economic and Security Review Commission by Senate Democratic Leader Harry Reid on October 5, 2005, for a two-year term expiring December 31, 2007.

On April 2, 2001, Commissioner Reinsch joined the National Foreign Trade Council as President. The council, founded in 1914, is the only business organization dedicated solely to trade policy, export finance, international tax, and human resource issues. The organization represents over 300 companies through its offices in New York and Washington, D.C.

Prior to joining the National Foreign Trade Council, Reinsch served as Under Secretary for Export Administration in the U.S. Department of Commerce. As head of the Bureau of Export Administration (subsequently renamed the Bureau of Industry and Security), he was charged with administering and enforcing the export control policies of the U.S. government, as well as its anti-boycott laws. In addition, the bureau is part of an interagency team helping Russia and other newly emerging nations develop effective export control systems and convert their defense industries to civilian

production. Through its Office of Strategic Industries and Economic Security, the bureau is also responsible for monitoring and protecting the health of U.S. industries critical to our national security and defense industrial base and assisting in domestic defense conversion efforts. Major accomplishments during his tenure included: refocusing controls in light of economic globalization, most notably on high-performance computers, microprocessors, encryption, and other items; the first complete revision of the Export Administration regulations in over forty years; revising the interagency process for reviewing applications; and permitting electronic filing of applications over the Internet.

From 1991 through 1993, Commissioner Reinsch was a senior Legislative Assistant to Senator John D. Rockefeller IV, 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.

From 1977 to 1991, Commissioner Reinsch served on the staff of the late Senator John Heinz as Chief Legislative Assistant, focusing on foreign trade and competitiveness policy issues. During that period, Senator Heinz was either Chairman or ranking minority member of the Banking Committee's Subcommittee on International Finance. He was also a member of the International Trade Subcommittee of the Finance Committee. Commissioner Reinsch provided staff support for the Senator on both subcommittees, which included participation in five revisions of the Export Administration Act and work on four major trade bills. Prior to 1977, Commissioner 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.

During his tenure as Under Secretary, Commissioner Reinsch delivered more than two hundred speeches and testified fifty-three times before various committees of Congress. His publications include "Why China Matters to the Health of the U.S. Economy," in *Economics and National Security: The Case of China*, 2002; "The Role and Effectiveness of U.S. Export Control Policy in the Age of Globalization," *The Monitor* (Center for International Trade and Security, spring 2000); "Export Controls in the Age of Globalization," *The Monitor* (Center for International Trade and Security, summer 1999); "Should Uncle Sam Control U.S. Technology Exports?" *Insight Magazine*, September 8, 1997; "Encryption Policy Strikes a Balance," *Journal of Commerce*, March 5, 1997; "Building a New Economic Relationship with Japan," in I.M. Destler and Yankelovich, D., eds., *Beyond the Beltway: Engaging the Public in U.S. Foreign Policy*, W.W. Norton, April 1994.

In addition to his legislative work, Commissioner Reinsch served as an adjunct associate professor at the University of Maryland 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 Middle East Institute and of the Executive Council on Diplomacy.

Commissioner Reinsch received a B.A. degree in International Relations from the Johns Hopkins University and an M.A. degree

from the Johns Hopkins School of Advanced International Studies. He is married with two children and lives in Bethesda, Maryland.

Hon. Fred Thompson

Commissioner Fred Thompson was appointed by Senate Majority Leader Bill Frist for a two-year term expiring December 31, 2006. He was elected to the United States Senate in 1994 where he served as Chairman of the Committee on Governmental Affairs from 1997 until 2002. He also served on the Senate Finance Committee and the Senate Select Committee on Intelligence. He chose not to run for re-election in 2002.

Prior to his election, Thompson maintained law offices in Nashville and Washington. Earlier in his career, he served as an Assistant United States Attorney in Tennessee. In 1973, he was appointed by Senator Howard Baker to serve as Minority Counsel to the Senate Watergate Committee where Thompson first gained national attention. He detailed his Watergate experience in his Watergate memoir, At That Point in Time. In 1974, after the Watergate hearings concluded, Thompson returned to the practice of law.

Thompson first appeared on screen in the film "Marie" in 1985, portraying himself in the fact-based story of a high-profile public corruption case he handled in Tennessee. Since then, he has appeared in numerous movies and television programs, including the features "In the Line of Fire," "Die Hard II," and "The Hunt for Red October," and the television series "China Beach," "Wiseguy," and "Matlock." He is a regular on the long-running TV drama, "Law & Order," and is a Special Program Host & Senior Analyst for ABC News Radio.

Thompson is a member of the Council on Foreign Relations, a member of the U.S.-China Economic & Security Review Commission and a Visiting Fellow with the American Enterprise Institute. He is the Chairman of the Arms Control & Nonproliferation Advisory Board.

Thompson is a native of Lawrenceburg, Tennessee. He attended Memphis State University, where he earned an undergraduate degree in philosophy and political science. He received his law degree from Vanderbilt University.

Thompson lives in Nashville, Tennessee and Washington, D.C. with his wife Jeri. He has two sons, one daughter, and five grandchildren.

Michael R. Wessel

Commissioner Michael R. Wessel was re-appointed to the U.S.-China Economic and Security Review Commission by House Democratic Leader Nancy Pelosi on January 4, 2005, for a two-year term expiring December 31, 2006. He has served on the Commission since April 2001.

Commissioner Wessel is President of The Wessel Group Inc., 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, Inc. He served on the staff of House Democratic Leader Richard A. Gephardt for more than twenty years, leaving his position as General Counsel in

March 1998. In addition to his duties as General Counsel, Commissioner Wessel was Mr. 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 twenty years on Capitol Hill, Commissioner Wessel served in a number of positions: He was Mr. Gephardt's principal Ways and Means aide, where he developed and implemented numerous tax and trade policy initiatives. He participated in the enactment of every major trade policy initiative from 1978 to 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.

He 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 10 percent Tax Plan, a comprehensive tax reform initiative that would enable roughly four out of five taxpayers to pay no more than a ten percent rate in federal income taxes. It became the principal Democratic tax reform alternative. In 1988, he served as National Issues Director to Gephardt's Presidential campaign. During the 1992 Clinton/Gore campaign, he assisted on a broad range of issues and served as a Senior Policy Advisor to the Clinton/Gore transition office. In 2004 he was a senior policy advisor to the Gephardt for President campaign and later cochaired the Trade Policy Group for the Kerry-Edwards campaign.

He has coauthored a number of articles with Democratic Leader Gephardt and a book, *An Even Better Place: America in the 21st Century (Public Affairs, 1999).* Commissioner Wessel has served as a Commissioner on the U.S.-China Economic and Security Review Commission since its creation in 2001. 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. He also currently serves as a member on the Board of Directors of the Goodyear Tire and Rubber Co., the world's largest tire company.

Commissioner Wessel holds a B.A. and a J.D. from George Washington University. He is a member of the bar of the District of Columbia and Pennsylvania. He and his wife Andrea have four children.

APPENDIX III

PUBLIC HEARINGS OF THE COMMISSION

Full transcripts and written testimonies are available online at the Commission's Website: www.uscc.gov.

September 14, 2006: Public Hearing on "China's Proliferation to North Korea and Iran, and Its Role in Addressing the Nuclear and Missile Situations in Both Nations," Washington, DC

Commissioners present: Carolyn Bartholomew, Vice Chairman; Daniel Blumenthal (Hearing Co-Chair); William A. Reinsch (Hearing Co-Chair); Peter Brookes; C. Richard D'Amato; Thomas Donnelly; Patrick Mulloy; Fred Thompson.

Witnesses: Paula DeSutter, Assistant Secretary of State for Verification, Compliance and Implementation; Peter W. Rodman, Assistant Secretary of Defense for International Security Affairs; Ehsan Ahrari, Ph.D., Strategic Paradigms Consultancy; John Calabrese, Ph.D., The Middle East Institute; Ilan Berman, American Foreign Policy Council; David Asher, Ph.D., Institute for Defense Analyses; Aaron Friedberg, Ph.D., Princeton University.

August 22, 2006: Public Hearing on "China's Financial System and Monetary Policies: The Impact on U.S. Exchange Rates, Capital Markets, and Interest Rates," Washington, DC

Commissioners present: Larry M. Wortzel, Chairman (Hearing Co-Chair); Carolyn Bartholomew, Vice Chairman; Patrick Mulloy (Hearing Co-Chair); Daniel Blumenthal; C. Richard D'Amato; Thomas Donnelly; William A. Reinsch; Fred Thompson; Michael Wessel.

Witnesses: Gordon Chang, Author; Mike Petit, Standard & Poor's; Kellee Tsai, Ph.D., Johns Hopkins University; Steve Judge, Securities Industry Association; Vickie Tillman, Standard and Poor's; John Dearie, The Financial Services Forum; Ronald McKinnon, Ph.D., Stanford University; Brad Setser, Ph.D., Roubini Global Economics; C. Fred Bergsten, Ph.D., Institute for International Economics; Peter Morici, Ph.D., University of Maryland; James Dorn, Ph.D., The CATO Institute; Phillip Swagel, Ph.D., American Enterprise Institute.

August 3-4, 2006: Public Hearing on "China's Role in the World: Is China a Responsible Stakeholder" Washington, DC

Commissioners present: Larry M. Wortzel, Chairman; Carolyn Bartholomew, Vice Chairman (Hearing Co-Chair); Daniel Blumenthal (Hearing Co-Chair); C. Richard D'Amato; Thomas Donnelly; Kerri Houston; Patrick Mulloy; William A. Reinsch; Michael Wessel (Hearing Co-Chair).

Congressional perspectives: James M. Inhofe, U.S. Senator from the State of Oklahoma.

Witnesses: Thomas Christensen, Ph.D., Department of State; Ernest J. Wilson, III, Ph.D., University of Maryland; John Calabrese, Ph.D., The Middle East Institute; Cynthia Watson, Ph.D., National Defense University; Ariel Cohen, Ph.D., The Heritage Foundation; Dru Gladney, Ph.D., University of Hawaii; Karl D. Jackson, Ph.D., Johns Hopkins University; Michael McDevitt, USN (Ret.), The Center for Naval Analyses; Robert Sutter, Ph.D., Georgetown University; Jared M. Genser, National Endowment for Democracy; Eric Reeves, Ph.D., Smith College; William Ratliff, Ph.D., The Hoover Institution; Katharine Ann Fredriksen, Department of Energy; Erica Downs, Ph.D., The Brookings Institution; Amy Jaffe, Rice University; Martha Brill Olcott, Carnegie Endowment for International Peace; David Gates, Ph.D., PFC Energy.

July 17, 2006: Public Hearing on "China's Impact on the U.S. Auto and Auto Parts Industries," Dearborn, MI

Commissioners present: Larry M. Wortzel, Chairman; Carolyn Bartholomew, Vice Chairman; Dan Blumenthal (Hearing Co-Chair); Peter Brookes; C. Richard D'Amato; Kerri Houston; Patrick Mulloy; Michael Wessel (Hearing Co-Chair).

Congressional perspectives: John Dingell, U.S. Congressman from the State of Michigan; Thaddeus McCotter, U.S. Congressman from the State of Michigan; Sander Levin, U.S. Congressman from the State of Michigan; Debbie Stabenow, U.S. Senator from the State of Michigan.

Witnesses: Ron Gettelfinger, United Auto Workers; Leo Gerard, United Steelworkers; Richard Trumka, AFL-CIO; Susan Helper, Ph.D., Case Western Reserve University; John Moavenzadeh, MIT International Motor Vehicle Program; Bruce Belzowski, University of Michigan; Sheila Ronis, Ph.D., Walsh College; Brian Suma, U.S. Army DMSMS INFO System; Randal Gaereminck, TARDEC; Terrence J. Keating, Accuride Corporation; Larry Denton, DURA Automotive Systems; Laurie Moncrieff, Schmald Tool and Die; Mark Schmidt, Atlas Tool, Inc.

June 7-8, 2006: Public Hearing on "Intellectual Property Rights Issues and Imported Counterfeit Goods," Washington, DC

Commissioners present: Larry M. Wortzel, Chairman; Carolyn Bartholomew, Vice Chairman; Daniel Blumenthal; Peter Brookes; C. Richard D'Amato (Hearing Co-Chair); Kerri Houston (Hearing Co-Chair); Patrick Mulloy; William A. Reinsch; Michael Wessel.

Congressional perspectives: Diane Watson, U.S. Congresswoman from the State of California; Carl Levin, U.S. Senator from the State of Michigan; Tom Coburn, U.S. Senator from the State of Oklahoma; Orrin Hatch, U.S. Senator from the State of Utah; Joe Knollenberg, U.S. Congressman from the State of Michigan; Donald Manzullo, U.S. Congressman from the State of Illinois.

Witnesses: Chris Israel, Department of Commerce; Tim Stratford, Assistant U.S. Trade Representative; Myron Brilliant, U.S Chamber of Commerce; Edward Jung, Intellectual Ventures; Jason S. Berman, Berman Rosen Global Strategies; John McGuire, Screen Actors Guild; Patricia Schroeder, Association of American Publishers; Randall Lutter, Ph.D., FDA; Kevin Delli-Colli, Dept. of Homeland Security; Peter Pitts, Center for Medicine in the Public Interest; David McCurdy, Honorable, Electronic Industries Alliance; Daniel C.K. Chow, Ohio State University; Terry Stewart, Esq., Stewart and Stewart; Justin Hughes, Yeshiva University; Andrew Mertha, Washington University; Timothy Trainer, Global Intellectual Property Strategy Center; Neil Livingstone, Ph.D., Global Options, Inc; Pat Choate, Ph.D., Manufacturing Policy Project.

April 4, 2006: Public Hearing on "China's WTO Compliance and Industrial Subsidies," Washington, DC

Commissioners present: Larry M. Wortzel, Chairman; Daniel Blumenthal; Peter Brookes (Hearing Co-Chair); C. Richard D'Amato; Kerri Houston; Patrick Mulloy; William A. Reinsch; Michael Wessel (Hearing Co-Chair).

Witnesses: Timothy Stratford, Assistant U.S. Trade Representative; Loren Yager, Government Accountability Office; Usha C.V. Haley, Ph.D., University of New Haven; Gregory Chow, Ph.D., Princeton University; C. Fred Bergsten, Ph.D., Institute for International Economics; David Hartquist, Collier Shannon Scott; Robert Baugh, AFL-CIO; Alan Prince, Wiley Rein & Fielding LLP; John Magnus, TradeWins, LLC.

March 16-17, 2006: Public Hearing on "China's Military Modernization and U.S. Export Controls," Washington, DC

Commissioners present: Larry M. Wortzel, Chairman; Carolyn Bartholomew, Vice Chairman, (Hearing Co-Chair); Daniel Blumenthal; Peter Brookes; C. Richard D'Amato; Thomas Donnelly, (Hearing Co-Chair); Kerri Houston; Patrick Mulloy; William A.

Reinsch, (Hearing Co-Chair); Fred Thompson, (Hearing Co-Chair); Michael Wessel.

Congressional perspectives: Thaddeus McCotter, U.S. Congressman from the State of Michigan; Jim Kolbe, U.S. Congressman from the State of Arizona; Lindsey Graham, U.S. Senator from the State of South Carolina; Donald Manzullo, U.S. Congressman from the State of Illinois; Earl Blumenauer, U.S. Congressman from the State of Oregon; Michael Enzi, U.S. Senator from the State of Wyoming.

Witnesses: Peter Rodman, Assistant Secretary of Defense for International Security Affairs; James Thomas, Department of Defense; Mark Stokes, Independent Consultant; Cortez Cooper, Hicks and Associates, Inc.; Jacqueline Newmyer, Ph.D., Harvard University; Roger Cliff, Ph.D., The RAND Corporation; Adam Segal, Ph.D., Council on Foreign Relations; Richard Bitzinger, Asia-Pacific Center for Security Studies; Richard Fisher, International Assessment and Strategy Center; Bernard Cole, Ph.D., National Defense University; Frank Record, Department of State; Beth McCormick, Honorable, Department of Defense; Darryl Jackson, Honorable, Department of Commerce; William Hawkins, U.S. Business and Industry Council; Edmund Rice, Coalition for Employment Through Exports, Inc; Edward Markey, NABCO, Inc; Takis Tridimas, Ph.D., Dickinson School of Law; Chris Hankin, former government official; John Tkacik, The Heritage Foundation.

February 2-3, 2006: Public Hearing on "Major Internal Challenges Facing The Chinese Leadership," Washington, DC

Commissioners present: Larry M. Wortzel, Chairman, (Hearing Co-Chair); Carolyn Bartholomew, Vice Chairman; C. Richard D'Amato; Kerri Houston; Patrick Mulloy; William A. Reinsch (Hearing Co-Chair); Michael Wessel.

Witnesses: James Keith, Department of State; Jerry Clifford, EPA; Flynt Leverett, Ph.D., The Brookings Institution Saban Center; Elizabeth Economy, Ph.D., Council on Foreign Relations; Bates Gill, Ph.D., Center for Strategic and International Studies; Albert Keidel, Ph.D., Carnegie Endowment for International Peace; David Welker, International Brotherhood of Teamsters; Joshua Muldavin, Ph.D., Sarah Lawrence College; Murray Scott Tanner, Ph.D., The RAND Corporation; Anne Thurston, Ph.D., Independent Researcher.

APPENDIX IV

LIST OF WITNESSES TESTIFYING BEFORE THE COMMISSION

2006 Hearings

Full transcripts and written testimonies are available online at the Commission's Website: www.uscc.gov.

Alphabetical Listing of Panelists Testifying before USCC

Panelist Name	Panelist Affiliation	USCC Hearing
Ahrari, Ehsan	Strategic Paradigms Consultancy	September 14, 2006
Asher, David	Institute for Defense Analyses	September 14, 2006
Baugh, Robert	AFL-CIO	April 4, 2006
Belzowski, Bruce	University of Michigan	July 17, 2006
Bergsten, C. Fred	Institute for International Economics	April 4, 2006 August 22, 2006
Berman, Ilan	American Foreign Policy Council	September 14, 2006
Berman, Jason	Berman Rose Global Strategies	June 7-8, 2006
Bitzinger, Richard	Asia Pacific Center for Security Studies	March 16-17, 2006
Blumenauer, Earl	U.S. Congressman, Oregon	March 16-17, 2006
Brilliant, Myron	U.S. Chamber of Commerce	June 7-8, 2006
Calabrese, John	The Middle East Institute	August 3-4, 2006 September 14, 2006
Chang, Gordon	Author	August 22, 2006
Choate, Pat	Manufacturing Policy Project	June 7-8, 2006
Chow, Daniel C.K.	Ohio State University	June 7-8, 2006
Chow, Gregory	Princeton University	April 4, 2006
Cliff, Roger	RAND Corporation	March 16-17, 2006

Alphabetical Listing of Panelists Testifying before USCC—Continued

Panelist Name	Panelist Affiliation	USCC Hearing
Clifford, Jerry	Environmental Protection Agency	February 2-3, 2006
Coburn, Tom	U.S. Senator, Oklahoma	June 7-8, 2006
Cohen, Ariel	The Heritage Foundation	August 3-4, 2006
Cole, Bernard	National Defense University	March 16-17, 2006
Cooper, Cortez	Hicks and Associates, Inc.	March 16-17, 2006
Christensen, Thomas	Department of State	August 3-4, 2006
Dearie, John	The Financial Services Forum	August 22, 2006
Delli-Colli, Kevin	Department of Homeland Security	June 7-8, 2006
Denton, Larry	DURA Automotive Systems	July 17, 2006
DeSutter, Paula	Department of State	September 14, 2006
Dingell, John	U.S. Congressman, Michigan	July 17, 2006
Dorn, James	The CATO Institute	August 22, 2006
Downs, Erica	The Brookings Institution	August 3-4, 2006
Economy, Elizabeth	Council on Foreign Relations	February 2-3, 2006
Enzi, Michael	U.S. Senator, Wyoming	March 16-17, 2006
Fisher, Richard	International Assessment and Strategy Center	March 16-17, 2006
Fredriksen, Katharine	Department of Energy	August 3-4, 2006
Friedberg, Aaron	Princeton University	September 14, 2006
Gaereminck, Randal	U.S. Army Materiel Command, TARDEC	July 17, 2006
Gates, David	PFC Energy	August 3-4, 2006
Genser, Jared	National Endowment for Democracy	August 3-4, 2006
Gerard, Leo	United Steelworkers	July 17, 2006
Gettelfinger, Ron	United Auto Workers	July 17, 2006
Gill, Bates	Center for Strategic and International Studies	February 2-3, 2006
Gladney, Dru	University of Hawaii	August 3-4. 2006
Graham, Lindsey	U.S. Senator, South Carolina	March 16-17, 2006
Haley, Usha C.V.	University of New Haven	April 4, 2006
Hankin, Chris	Former Government Official	March 16-17, 2006

Alphabetical Listing of Panelists Testifying before USCC—Continued

Panelist Name	Panelist Affiliation	USCC Hearing
Hartquist, David	Collier Shannon Scott	April 4, 2006
Hatch, Orrin	U.S. Senator, Utah	June 7-8, 2006
Hawkins, William	U.S. Business and Industry Council	March 16-17, 2006
Helper, Susan	Case Western Reserve University	July 17, 2006
Hughes, Justin	Yeshiva University	June 7-8, 2006
Israel, Chris	Department of Commerce	June 7-8, 2006
Inhofe, James M.	U.S. Senator, Oklahoma	August 3-4, 2006
Jackson, Darryl	Department of Commerce	March 16-17, 2006
Jackson, Karl	Johns Hopkins University	August 3-4, 2006
Jaffe, Amy	Rice University	August 3-4, 2006
Judge, Steve	Securities Industry Association	August 22, 2006
Jung, Edward	Intellectual Ventures	June 7-8, 2006
Keating, Terrence	Accuride Corporation	July 17, 2006
Keidel, Albert	Carnegie Endowment for International Peace	February 2-3, 2006
Keith, James	Department of State	February 2-3, 2006
Knollenberg, Joe	U.S. Congressman, Michigan	June 7-8, 2006
Kolbe, Jim	U.S. Congressman, Arizona	March 16-17, 2006
Leverett, Flynt	The Brookings Institution Saban Center	February 2-3, 2006
Levin, Carl	U.S. Senator, Michigan	June 7-8, 2006
Levin, Sander	U.S. Congressman, Michigan	July 17, 2006
Livingstone, Neil	Global Options, Inc.	June 7-8, 2006
Lutter, Randall	Food and Drug Administration	June 7-8, 2006
Magnus, John	TradeWins, LLC	April 4, 2006
Manzullo, Donald	U.S. Congressman, Illinois	March 16-17, 2006 June 7-8, 2006
Markey, Edward	NABCO, Inc.	March 16-17, 2006
McCormick, Beth	Department of Defense	March 16-17, 2006
McCotter, Thaddeus	U.S. Congressman, Michigan	March 16-17, 2006 July 17, 2006

Alphabetical Listing of Panelists Testifying before USCC—Continued

Panelist Name	Panelist Affiliation	USCC Hearing
McCurdy, David	Electronic Industries Alliance	June 7-8, 2006
McDevitt, Michael	The Center for Naval Analyses	August 3-4, 2006
McGuire, John	Screen Actors Guild	June 7-8, 2006
McKinnon, Ronald	Stanford University	August 22, 2006
Mertha, Andrew	Washington University	June 7-8, 2006
Moavenzadeh, John	MIT International Motor Vehicle Program	July 17, 2006
Moncrieff, Laurie	Schmald Tool and Die	July 17, 2006
Morici, Peter	University of Maryland	August 22, 2006
Muldavin, Joshua	Sarah Lawrence College	February 2-3, 2006
Newmyer, Jacqueline	Harvard University	March 16-17, 2006
Olcott, Martha	Carnegie Endowment for International Peace	August 3-4, 2006
Petit, Mike	Standard & Poor's	August 22, 2006
Pitts, Peter	Center for Medicine in the Public Interest	June 7-8, 2006
Price, Alan	Wiley Rein & Fielding LLP	April 4, 2006
Ratliff, William	The Hoover Institution	August 3-4, 2006
Record, Frank	Department of State	March 16-17, 2006
Reeves, Eric	Smith College	August 3-4, 2006
Rice, Edmund	Coalition for Employment Through Exports, Inc.	March 16-17, 2006
Rodman, Peter	Department of Defense	March 16-17, 2006 September 14, 2006
Ronis, Sheila	Walsh College	July 17, 2006
Schmidt, Mark	Atlas Tool, Inc.	July 17, 2006
Schroeder, Patricia	Association of American Publishers	June 7-8, 2006
Segal, Adam	Council on Foreign Relations	March 16-17, 2006
Setser, Brad	Roubini Global Economics	August 22, 2006
Stabenow, Debbie	U.S. Senator, Michigan	July 17, 2006
Stewart, Terrence	Stewart and Stewart	June 7-8, 2006
Stokes, Mark	Independent Consultant	March 16-17, 2006

Alphabetical Listing of Panelists Testifying before USCC—Continued

Panelist Name	Panelist Affiliation	USCC Hearing
Stratford, Tim	Assistant U.S. Trade Representative	April 4, 2006 June 7-8, 2006
Suma, Brian	U.S. Army DMSMS INFO System	July 17, 2006
Sutter, Robert	Georgetown University	August 3-4, 2006
Swagel, Phillip	American Enterprise Institute	August 22, 2006
Tanner, Murray Scott	RAND Corporation	February 2-3, 2006
Thomas, James	Department of Defense	March 16-17, 2006
Thurston, Anne	Independent Researcher	February 2-3, 2006
Tillman, Vickie	Standard & Poor's	August 22, 2006
Tkacik, John	The Heritage Foundation	March 16-17, 2006
Trainer, Timothy	Global Intellectual Property Strategy Center	June 7-8, 2006
Tridimas, Takis	Dickinson School of Law	March 16-17, 2006
Trumka, Richard	AFL-CIO	July 17, 2006
Tsai, Kellee	Johns Hopkins University	August 22, 2006
Watson, Cynthia	National Defense University	August 3-4, 2006
Watson, Diane	U.S. Congresswoman, California	June 7-8, 2006
Welker, David	International Brotherhood of Teamsters	February 2-3, 2006
Wilson, Ernest J.	University of Maryland	August 3-4, 2006
Yager, Loren	Government Accountability Office	April 4, 2006

APPENDIX V
LIST OF RESEARCH MATERIAL

The material listed below is available online at the Commission's Web site www.uscc.gov. The research papers were prepared at the request of the Commission to support its deliberations and are intended to promote greater public understanding of the issues addressed by the Commission. However, inclusion in the Report does not imply an endorsement by the Commission or any individual Commissioner of views expressed in the material.

Commissioned Research Papers

- John Keefer Douglas, Matthew B. Nelson, and Kevin Schwartz, *Fueling the Dragon's Flame: How China's Energy Demands Affect its Relationships in the Middle East* (Tufts University Energy Research Group: September 14, 2006). Available online at www.uscc.gov/researchpapers/2006/China__ME__FINAL.pdf.
- *China's Overseas Investments in Oil and Gas Production* (Eurasia Group: October 16, 2006). Available online at www.uscc.gov/researchpapers/2006/oil__gas.pdf.

APPENDIX VI
ABBREVIATIONS

863 Program	China's National High Technology Research and Development Plan
973 Program	National Program on Key Basic Research Projects
AD	anti-dumping duties
AFL-CIO	American Federation of Labor and Congress of Industry Organizations
AIDS	acquired immunodeficiency syndrome
AIO	Aerospace Industries Organization (Iran)
ASCM	anti-ship cruise missile
ASEAN	Association of Southeast Asian Nations
BBG	Broadcast Board of Governors
C4ISR	command, control, communications, computer, intelligence and strategic reconnaissance
CCC	China Compulsory Certification (CCC)
CCP	Chinese Communist Party
CFIUS	Committee on Foreign Investments in the United States
CIA	Central Intelligence Agency
CNOOC	Chinese National Offshore Oil Corporation
CNPC	China National Petroleum Corporation
COTS	commercial off-the-shelf
CPCIA	China Petroleum and Chemical Industry Association
CVD	countervailing duties
DCI	Director of Central Intelligence
DHS	Department of Homeland Security
DMSMS	Diminishing Manufacturing Sources and Material Shortages
DoD	Department of Defense
DPRK	Democratic People's Republic of Korea
EAA	Export Administration Act of 1979
ECO	export control officer
EU	European Union
EUVU	End Use Visit Understanding
FDI	foreign direct investment
GAO	Government Accountability Office
GATS	General Agreement on Trade in Services
GATT	General Agreement on Tariffs and Trade
GCC	Gulf Cooperation Council
GDP	gross domestic product
GIF	Generation IV International Forum
GNP	gross national product
NGO	nongovernmental organization

HIV	human immunodeficiency virus
IAEA	International Atomic Energy Agency
ICE	Immigration and Customs Enforcement
IEA	International Energy Agency
IEEPA	International Emergency Economic Powers Act
IMF	International Monetary Fund
IP	intellectual property
IPR	intellectual property rights
IT	information technology
ITC	International Trade Commission
JCCT	U.S.-China Joint Commission on Commerce and Trade
LACM	land-attack cruise missile
MIT	Massachusetts Institute of Technology
MFN	Most Favored Nation
MNC	multinational corporations
MOFCOM	Ministry of Commerce
MOU	Memorandum of Understanding
MTCR	Missile Technology Control Regime
NME	non-market economy
NORINCO	China North Industries Corporation
NPL	non-performing loans
NSG	Nuclear Suppliers Group
OEM	original equipment manufacturer
OESA	Original Equipment Suppliers Association
PBoC	People's Bank of China
PLA	People's Liberation Army
PLAAF	PLA Air Force
PLAN	PLA Navy
PNTR	permanent normal trade relations
PRC	People's Republic of China
PSB	Public Security Bureau
PSI	Proliferation Security Initiative
R&D	research and development
RFA	Radio Free Asia
ROC	Republic of China
RMB	Renminbi (China's currency)
SAFE	State Administration for Foreign Exchange
SARS	severe acute respiratory syndrome
SCO	Shanghai Cooperation Organization
SEPA	State Environmental Protection Administration
SINOPEC	China Petroleum and Chemical Corporation
SIPO	State Intellectual Property Office (China)
SLOCs	sea lines of communications
SME	Small and Medium Sized Enterprises.
SOE	state-owned enterprises
SPR	strategic petroleum reserve
S&T	science and technology
STOP	strategy targeting organized piracy
TPM	Technological Protection Measures
TPRG	Trade Policy Review Group
TPSC	Trade Policy Staff Committee
TRIPS	Trade Related Aspects of Intellectual Property Rights Agreement

UAV	unmanned aerial vehicle
U.N.	United Nations
USPTO	United States Patent and Trade Office
USTR	United States Trade Representative
VOA	Voice of America
WIPO	World Intellectual Property Organization
WMD	weapons of mass destruction
WTO	World Trade Organization

APPENDIX VII

EXCERPTS FROM U.S. DEPARTMENT OF STATE REPORT

ADHERENCE TO AND COMPLIANCE WITH ARMS CONTROL, NONPROLIFERATION, AND DISARMAMENT AGREEMENTS AND COMMITMENTS

U.S. Department of State
Bureau of Verification and Compliance
Washington, DC
August 30, 2005

The following excerpts from the Bureau of Verification and Compliance 2005 report describe China's adherence to and compliance with its arms control, nonproliferation, and disarmament agreements and commitments.

VI. Compliance of Other Nations (Including Successors to the Soviet Union) with Multilateral Agreements

A. THE 1972 BIOLOGICAL AND TOXIN WEAPONS CON VENTION (BWC)

CHINA

ISSUE.—The United States believes that China continues to maintain some elements of an offensive BW capability. The issue is whether this capability constitutes a violation of the BWC.

HISTORY OF COMPLIANCE EVALUATION.—The United States has assessed the People's Republic of China's compliance with the BWC as early as June 1992. At that time, the United States concluded that it was highly probable that China had not eliminated its BW program since becoming a State Party to the BWC in 1984. In the 1994 Report, we indicated that China's CBM-mandated declarations had not resolved U.S. concerns about this probable BW program, and reported that there were strong indications that China "probably maintains its offensive program." In the unclassified version of the June 2003 Report, the United States concluded more specifically that:

The United States believes that in the years after its accession to the BWC, China was not in compliance with its BWC obligations. China continues to maintain some elements of an offensive biological warfare program it is believed to have started in the 1950s.

DISCUSSION OF OBLIGATIONS.—China deposited its instrument of accession, and thereby became a State Party to the BWC on November 15, 1984. Since that point, China has been obligated to comply fully with the provisions of the Convention.

ACTIONS.—The United States believes that China began its offensive BW program in the 1950s and continued its program throughout the Cold War, even after China acceded to the BWC in 1984. Undoubtedly China perceived a threat from the BW programs of its neighbor, the Soviet Union. There are some reports that China may still retain elements of its biological warfare program. Such reports support the United States' continued belief that China has not abandoned its offensive BW program.

China has a number of civilian and military facilities that could be associated with an offensive BW program. For example:

- The Chinese Ministry of Defense's Academy of Military Medical Sciences (AMMS) Institute of Microbiology and Epidemiology (IME) in Beijing is acknowledged as a biodefense research facility.
- The Lanzhou Institute of Biological Products (LIBP) has been identified as a vaccine producer. We believe that LIBP has several BL-3 laboratories and dual use capabilities.

From 1993 to the present, military scientists have published in open literature the results of studies of aerosol stability of bacteria, models of infectious virus aerosols, and detection of aerosolized viruses using polymerase chain reaction technology. Such advanced biotechnology techniques could be applicable to the development of offensive BW agents and weapons.

Facilities in China that may have legitimate public health and commercial uses could also offer access to additional BW-enabling capabilities.

COMPLIANCE-RELATED DIALOGUE AND ANALYSIS.—U.S. concerns regarding China's BWC compliance are based on a number of indicators over a number of years. First, the United States believes that China possessed an offensive BW program prior to its accession to the BWC in 1984. Upon accession, China was obliged to eliminate its offensive program, but China never admitted this program and the United States believes that it maintained the program throughout most of the 1980s, at the very least.

Although China has submitted its voluntary annual BWC CBM data declarations every year—and did so again in 2002 and 2003—we assess that the information submitted therein continues to be inaccurate and misleading. BWC CBMs since 1991 have called on the States Parties to declare, among other things, their past offensive activities, which China has not done. On the contrary, China insists it never had such a program at all. In its October 17, 2002, announcement on the promulgation of "Regulations on Export Control of Dual-use Biological Agents and related Equipment and Technologies," for instance, China stated that it "has always fulfilled earnestly its obligations under the Convention" and "has never developed, produced or stockpiled any biological weapons, and never assisted any country to acquire or develop these weapons." These claims, we believe, are inaccurate.

China's current research activities and dual-use capabilities raise the possibility that sophisticated BW work could be underway. For example, because of the possible offensive applications of aerosolization techniques, the United States' concerns are underscored by publications indicating military involvement in such research.

FINDING.—The United States reaffirms its judgment that China maintains some elements of an offensive BW capability in violation of its BWC obligations. Despite China's BWC CBM declarations to the contrary, indications suggest that China maintained an offensive BW program prior to acceding to the Convention in 1984.

D. THE CHEMICAL WEAPONS CONVENTION (CWC)

CHINA

ISSUE.—The issue is whether China maintains an active offensive CW research and development (R&D) program, has a CW production mobilization capability, and has made inaccurate declarations regarding its past transfer of chemical weapons and undeclared CW-related facilities.

HISTORY OF COMPLIANCE EVALUATION.—The Peoples Republic of China (PRC) submitted its initial declaration to the OPCW on time in 1997 but the United States was not initially given a complete copy of the Chinese declaration upon which to base a compliance judgment. As a result of a comprehensive review of the Chinese declaration, the United States entered into a dialogue with the Chinese in December 1998 highlighting our concerns about anomalies and shortcomings in its declaration. As noted in the CY1999 unclassified version of the NCR, the United States continued unsuccessfully to press China for a response to our concerns, stating that "until the United States received and evaluated the Chinese response, a compliance judgment is not possible." The finding in the unclassified version of the June 2003 Report stated that:

The United States assesses that China maintains an active offensive R&D CW program, a possible undeclared CW stockpile, and CW-related facilities that were not declared. Such activities are inconsistent with the CWC.

DISCUSSION OF OBLIGATIONS.—China is an original State Party to the CWC, and submitted its initial declaration on time. In this initial declaration, China declared that it had eliminated facilities, stockpile and materials relating to CW. However, it said that it maintained a defensive research and development capability in accordance with the Convention. The Chinese chemical industry has the capability to produce many chemicals, some of which have been sought by states trying to develop a chemical warfare capability.

ACTIONS.—China continues to conduct CW research and development that has applications for either defensive or offensive purposes. China also has the capability to quickly mobilize its chemical industry to produce a wide variety of chemical agents.

COMPLIANCE-RELATED DIALOGUE AND ANALYSIS.—Since 1998, the United States and China have been in a dialogue regarding CWC compliance issues. The United States have discussed a number of these issues between experts, in written communiqués, and in the ongoing U.S.' China Security dialogues. As a result of these contacts, we have improved our understanding of the Chinese initial declaration. That said, however, concerns remain and the dialogue continues.

FINDING.—The United States judges that China maintains a CW production mobilization capability, although there is insufficient information available to determine whether it maintains an active offensive CW research and development program. Moreover, in violation of its CWC obligations, China has not acknowledged past transfers of chemical weapons and it may not have declared the full extent of its CW-related facilities.

E. THE NUCLEAR NON-PROLIFERATION TREATY (NPT)

CHINA

ISSUE.—China's nuclear-related interactions with other countries have raised concerns regarding China's compliance with its NPT Article I obligation "not in any way to assist, encourage, or induce any non-nuclear-weapon State to manufacture or otherwise acquire nuclear weapons."

HISTORY OF COMPLIANCE EVALUATION.—China has joined several international nuclear regimes and has promulgated comprehensive nuclear export controls over the past decade in an effort to bolster its credentials as a responsible international player. Beijing signed the Nonproliferation Treaty in 1992, joined the NPT Exporters ("Zangger") Committee in 1997, and implemented dual-use

nuclear export controls based on the Nuclear Suppliers Group (NSG) control list in 1998. Nevertheless, until May 2004, China was the only NPT nuclear weapon state that had declined to join the NSG. It should be noted, however, that NSG membership is not required by the NPT. Since the Zangger Committee only requires item-specific safeguards; as opposed to the more stringent requirement of the NSG, which mandates full-scope safeguards, China was therefore technically in a position to sell controlled nuclear-related items to non-NPT members, as long as the items themselves went to a facility subject to safeguards. This technical difference made it possible for China to provide assistance to safeguarded facilities, in such countries as Pakistan, should it choose to do so. It appears that Chinese policies and nuclear export control systems contain all the necessary elements to enforce China's obligations under Article I of the NPT should China wish to. In the June 2003 Noncompliance Report, the United States concluded that:

While we continue to believe that Beijing is seriously prepared to implement its NPT obligations, and has taken steps to do so, given all the available information, the United States remains concerned about China's compliance with its nuclear nonproliferation commitments.

DISCUSSION OF OBLIGATIONS.—In early 1992, China acceded to the NPT. By joining the Treaty as a Nuclear-Weapon State Party, China became obligated under Article I of the Treaty not in any way to assist, encourage, or induce any NNWS to manufacture or otherwise acquire nuclear weapons or other nuclear explosive devices.

Under Article III, China also made a commitment to ensure the application of IAEA safeguards on exports to any NNWS of nuclear material and equipment especially designed or prepared for the processing, use, or production of special nuclear material. The NPT exporters' Zangger Committee has defined a "trigger list" of such equipment and material, and members have announced a common understanding on controlling listed items as a guideline for implementing this provision.

While China is a member of the Zangger Committee, until May 2004 it was the only nuclear weapons state that was not also a member of the Nuclear Suppliers Group (NSG), which requires full scope safeguards (i.e., IAEA safeguard on all nuclear material) in a recipient NNWS state as a condition of nuclear exports. At that time, China did, however, have export control laws that mirror the NSG guidelines during the reporting period. In addition, on May 11, 1996, China publicly pledged to the United States that it would not provide assistance to unsafeguarded nuclear facilities. China was accepted into the NSG in May 2004.

In a 1997 letter provided to the United States, the Chinese Vice Premier stated that "China consistently has opposed

the proliferation of weapons; does not advocate, encourage or engage in proliferation of nuclear weapons, nor assists other countries in developing nuclear weapons."

ACTIONS.—As the United States has monitored China's actions in relation to its obligations under the NPT, China's interactions with two countries, in particular, have raised concerns. Most of the basis for these concerns cannot be discussed here, but it is worth noting that in February 2003, an anti-Iranian opposition group alleged publicly that Chinese experts were continuing to work at Iran's Saghand uranium mine as supervisors.

In 2002 and 2003, foreign entities also continued their efforts to acquire nuclear-related materials and dual-use equipment from Chinese suppliers. Such contacts remain an intense concern of the United States.

COMPLIANCE-RELATED DIALOGUE AND ANALYSIS.—China's compliance with its nuclear nonproliferation obligations has been the subject of considerable scrutiny. In the past, the United States has cited two key factors as being especially relevant to our judgment of China's compliance with the NPT: (1) China's May 11, 1996, public and private commitments not to provide assistance to unsafeguarded nuclear facilities; and (2) the establishment of a comprehensive national nuclear export control system. U.S. officials stressed that China's May 11, 1996, commitments should also prohibit assistance to entities involved in the design or testing of the non-nuclear components of a nuclear device.

In laying out the principal elements of a comprehensive nuclear export control system, U.S. officials stressed a number of factors: that controls should apply to all private and public entities; that the control list should encompass all equipment, material and technology covered by the NSG, including dual-use items; that technology controls should extend to personnel as well as information; that some type of catch-all control should be part of the system; and that the controls should extend to nuclear weapons information and equipment.

It appears that Chinese policy and nuclear export control systems, adopted in the aftermath of the October 1997 U.S.-China Summit, contain all the elements necessary to permit China to implement its obligations under Article I of the NPT. This conclusion led President Clinton, on January 12, 1998, to send to Congress the certifications necessary to implement the 1985 U.S.-China peaceful nuclear cooperation agreement. Thereafter, members of Congress were briefed in closed session on the details of a few cases. On March 18, 1998, following a review of 30 days of continuous session of Congress, the conditions for the initiation of U.S. peaceful nuclear cooperation with China were met.

Chinese regulations in place cover both trigger list items (i.e., those items relevant to Article III of the NPT) and

nuclear dual-use items. China promulgated nuclear dual-use regulations by mid-1998. "Catch-all" control authority exists for Chinese government departments and the government has the authority to control items that may not be on control lists. The controls apply to technology in the form of exchanges of personnel, as well as to the transfer of written information and tangible items.

China's export control system appears designed to ensure adequate review for those exports that come to the attention of Chinese export control authorities if these authorities choose to exercise this authority.

FINDING.—China has joined several international nuclear regimes and has promulgated comprehensive nuclear export controls over the past decade. Nevertheless, based upon all available information, the United States remains concerned about the effectiveness of Chinese nuclear export controls and China's compliance with its NPT Article I nuclear nonproliferation commitments.

VII. COMPLIANCE OF OTHER NATIONS (INCLUDING SUCCESSORS TO THE SOVIET UNION) WITH THEIR INTERNATIONAL COMMITMENTS

A. MISSILE NONPROLIFERATION COMMITMENTS

CHINESE NONPROLIFERATION COMMITMENTS.—Intensive bilateral dialogue and high-level political efforts augmented by trade sanctions imposed in 1991-92, 1993-94, and since September 2001 have resulted in a variety of Chinese missile nonproliferation commitments.

China is not an MTCR partner. However, as described below, it has committed over the course of a number of years to abide by various missile nonproliferation commitments.

Noncompliance concerns emerged soon after China issued its first missile nonproliferation commitment in March 1992. Previously in June 1991, the United States imposed sanctions on two Chinese entities-- China Great Wall Industry Corporation (CGWIC) and the China Precision Machinery Import/Export Corporation (CPMIEC)-- in connection with the sale of M-11 missile-related equipment to Pakistan. In return for ending sanctions on these two entities, China provided a written commitment in March 1992 to then Secretary of State James Baker that it would abide by the original "guidelines and parameters" of the MTCR, which the United States publicly stated were applicable to both the M-9 (CSS-6) and M-11 (CSS-7) missiles. After issuing this commitment, Chinese entities transferred M-11 missiles to Pakistan. In response to U.S. complaints, China indicated that the M-11 missile was not covered by the MTCR and that it was fully complying with its 1992 pledge. In 1993, the United States imposed Category II sanctions on the Chinese Ministry of Aerospace Industry

and the Pakistani Ministry of Defense for their roles in the transfer. Some of the divisions of the Ministry of Aerospace Industry that were affected by the sanctions included: the China Precision Machinery Import-Export Corporation (CPMIEC), China Great Wall Industrial Corporation (CGWIC), China Aerospace Corporation (CASC), and the Chinese Academy of Space Technology (CAST).

In return for the lifting of the sanctions imposed in 1993, China pledged in October 1994 in a Joint Statement with the United States that it would not transfer ground-to-ground missiles "inherently capable of reaching a range of at least 300 km with a payload of at least 500 kilograms." In the years following this commitment, Chinese entities continued to provide missile-related items and assistance to countries, including Iran and Pakistan. China declared in October 1996 that its previous commitments did not cover items contained on the MTCR Annex. However, following additional negotiations, in June 1998, China in a Joint Statement reaffirmed that its policy was "to prevent the export of equipment, materials, or technology that could in any way assist programs in India or Pakistan, for nuclear weapons or for ballistic missiles capable of delivering such weapons." Nevertheless, despite these Chinese assurances, the United States continued to detect evidence of Chinese missile-related transfers.

In return for the waiving of sanctions on several companies, China in November 2000 issued a stronger commitment to missile nonproliferation, stating it would not assist "in any way, any country in the development of ballistic missiles that can be used to deliver nuclear weapons (i.e., missiles capable of delivering a payload of at least 500 kilograms to a distance of at least 300 kilometers)." The Chinese, however, continued to make no mention of preventing or restricting the proliferation of Category II missiles in their commitment. In addition, China agreed to enact and publish comprehensive missile-related export controls "at an early date." China's unilateral political commitment and the related discussions with the United States have been referred to as "the November 2000 Arrangement."

Since China's first commitment in March 1992 and until these negotiations stopped in November 2000, these successive cycles of bilateral compliance diplomacy have fallen into a common pattern. When U.S. intelligence detects evidence of missile-related transfers by Chinese entities to proliferant countries, China first either denies such transfers occurred or asserts that the transfers in question did not violate its commitments to the United States. Then, after protracted bilateral consultations, China issues another nonproliferation pledge and the United States waives sanctions, only to begin the cycle again.

Despite the November 2000 Arrangement, the United States continues to have similar concerns about Chinese compliance with and implementation of its missile nonproliferation commitments. Transfers that assist in the development of Category I missile programs in Iran and Pakistan continue. The continued proliferation of missile-related technology led the United States to impose sanctions in September 2001 on the China Metallurgical Equipment Corporation (CMEC/MECC). Since then, and as detailed in this report, numerous Chinese entities have continued to provide missile-related technology to nuclear-capable Category I ballistic missile programs.

In addition, China has interpreted and implemented its November 2000 political commitments in ways that have fallen short of establishing an effective missile nonproliferation system.

OTHER NONPROLIFERATION COMMITMENTS.—As part of its bilateral diplomatic consultations, the United States has sought nonproliferation commitments from both missile technology supplier states and recipient nations that are not members of the MTCR or the HCOC. Some countries have agreed to support common nonproliferation objectives by making a commitment to the United States not to acquire WMD-capable delivery systems for their military.

COUNTRY ASSESSMENTS

CHINA

ISSUE.—Proliferation of missile-related technology by Chinese entities continues and calls into question China's stated commitment to controlling missile proliferation.

HISTORY OF ADHERENCE EVALUATION.—Chinese compliance with its missile nonproliferation commitments was first assessed in the June 2003 (CY2001) NCR. In that Report, the United States concluded that:

[China's] actions call into serious question China's stated commitment to controlling missile proliferation. Chinese state-owned corporations have engaged in transfer activities with Pakistan, Iran, North Korea, and Libya that are clearly contrary to China's commitments to the United States.

COMMITMENTS UNDERTAKEN.—In return for the waiving of a number of sanctions required by U.S. law for past serious transfers by Chinese entities to the Iranian and Pakistani missile programs, including the transfer of a missile production facility to Pakistan, China in November 2000 issued a stronger commitment to missile nonproliferation stating it would not assist "in any way, any country in the development of ballistic missiles that can be used to deliver nuclear weapons (i.e., missiles capable of delivering a payload of at least 500 kilograms to a distance of at least 300 kilometers)." In addition, China agreed to

of at least 300 kilometers)." In addition, China agreed to enact and publish comprehensive missile-related export controls "at an early date." China's unilateral political commitment and the related discussions with the United States have been referred to as "the November 2000 Arrangement."

ACTIONS.—Despite China's November 2000 Arrangement and the promulgation of export control regulations, China's proliferation of missile-related technology continues and calls into question China's stated commitment to controlling missile proliferation. These missile-related transfers continued in 2002 and 2003 to ballistic missile programs in Iran, Iraq, Libya, Pakistan, and North Korea. The United States has sanctioned several of the companies transferring these technologies.

Chinese entities continued to transfer missile-related goods and technical knowledge to countries such as Pakistan, Iran, Libya, and North Korea. These transfers continue to contribute the development of MTCR Category I ballistic missiles in these countries. In addition, Chinese entities provided dual-use missile-related items, raw materials, and assistance to Iran, Libya, and North Korea.

China's implementation and enforcement of the missile export control regulations remain problematic. The Chinese Government has not established a system of end-use verification checks to ensure that items approved for transfer are not diverted. China must also ensure that "catch-all" controls are effectively implemented within China. Finally, China needs clearly to signal to all Chinese entities that it intends vigorously to enforce its export controls. Beijing has also not taken adequate steps under these new regulations to prevent sensitive transfers or prosecute violations, and China needs to publicize its efforts to enforce its export control regulations.

COMPLIANCE-RELATED DIALOGUE AND ANALYSIS.—Despite its November 2000 pledge, Chinese companies in 2002 and 2003 continued to supply technology and assistance to missile programs in various countries; this technology and assistance was of direct use to these programs. The United States has gone to considerable lengths to inform the Chinese Government about the proliferation activities of these entities. However, despite these efforts, the Chinese Government almost invariably denies that such activities are occurring, and Chinese entities and persons continue to proliferate missile technology.

FINDING.—The United States finds that items transferred by Chinese entities contributed to Category I missile programs contrary to the Chinese Government's November 2000 missile nonproliferation commitments. The United States remains concerned and will continue to monitor this situation closely.

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