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U.S.-China Commission Hearing on China's Proliferation and the Impact of Trade Policy on Defense Industries in the United States and China.
July 13, 2007

Recent problems with Chinese imports, including contaminated toothpaste, toys containing lead paint, tainted ingredients for pet food and fish, and defective components in automobile tires and aircraft landing gear, have brought to the fore the fact that consumers, retailers and many manufacturers do not know the extent that Chinese items have entered their supply chains. The same is likely true for high-tech and industrial goods, including those used by the United States military, but there is a shortage of data available to measure how far Chinese penetration of sub-tier production for defense contracts has advanced.

U.S. Government is not keeping adequate track of foreign subcontracting

This is a problem for all defense contracting, not just in respect to China. A 1998 Government Accountability Office (GAO) report prepared at the request of Rep. Duncan Hunter, chair of the House National Security Subcommittee on Military Procurement, found

> The Office [of Foreign Contracting] has no mechanism for ensuring that contractors provide required foreign subcontract information, which contributes to the underrepresentation of foreign subcontract activity. Our review of selected subcontracts disclosed instances in which foreign subcontracts were not reported to the Office because contractors were unaware of the reporting requirement or misunderstood the criteria for reporting a foreign subcontract. The Office's poor database management also compromises the credibility and usefulness of its foreign subcontract data.[1]

There continues to be evidence that DoD still does not put much effort into tracking foreign dependency or the consequences of industrial integration across borders. In a 2005 report requested by the Senate Armed Services Committee, the GAO reported, "DSS [Defense Security Service] does not systematically ask for, collect, or analyze information on foreign business transactions in a manner that helps it properly oversee contractors entrusted with U.S. classified information. In addition, DSS does not collect and track the extent to which classified information is left in the hands of a contractor under FOCI [foreign ownership, control, or influence] before measures are taken to reduce the risk of unauthorized foreign access."[2]

Section 812 of the National Defense Authorization Act for Fiscal Year 2004 directed the Secretary of Defense to establish a program to assess the degree to which the United States is dependent on foreign sources of supply; and the capabilities of the United States defense industrial base to produce military systems necessary to support the national security objectives.

The DoD report released in 2006 to fulfill this requirement was based "on three separate assessments that collectively provide visibility into the extent and impact of foreign suppliers: (1) an assessment of DoD prime contracts valued at over $25,000 for defense items and components, (2) a 2004 assessment of foreign content in certain defense systems, and (3) a current assessment of defense trade by the Government Accountability Office (GAO)."[3] Yet this methodology seemed designed to frustrate the intent of Congress. Concentrating on the prime contractor level and contracts let directly from DoD provides no information about the foreign content of sub-systems or the origin of parts and components sourced at lower tiers. Products "manufactured" overseas are actually assembled from parts which can come from dozens of other countries, and the Pentagon report does not capture this data.

The 2004 assessment was a sample of 12 combat systems, down to the second tier, and included 806 firms. The study found that foreign contractors only accounted for four percent of the total value of the systems. But this does not mean that future systems will not utilize more foreign input given that all the armed services are in the process of adopting new systems across the board in an environment of increasing globalization and a lax attitude towards outsourcing at the Pentagon. As the report states, "the Department generally does not mandate supplier selections to its contractors. The Department expects its contractors to select reliable, capable suppliers consistent with obtaining best value, encouraging effective competition, and meeting national security requirements. Generally, prime contractors and first and second tier suppliers indicated they selected the foreign subcontractors for specific items because those subcontractors offered the best combination of price, performance, and delivery."[4] These are business considerations made by executives looking at the bottom line, not geopolitical considerations.

The third source of data, the GAO report on trade, merely states that U.S. defense exports averaged $11.5 billion a year from 2000 to 2004, while U.S. defense imports averaged only $1.8 billion during the same period. It gives no details about what foreign components were in the $1.8 billion dollars worth of imports. Also, the GAO found that "DOD does not consider purchases from a company that is incorporated in the United States but owned by a foreign parent company to be foreign."[5] Yet, such companies are very likely to source foreign components through their parent firm.

Industry shifting to Asia, with China gaining market share

There has been a growing concern that the American defense industrial base is being hollowed out by global sourcing of components by prime contractors and sub-contractors motivated by least-cost production criteria in the absence of government action to maintain national capabilities.

The Pentagon has defended overseas outsourcing on three main grounds: improving relations with allied or other "friendly" governments; acquiring the best equipment for the American warfighter regardless of origin; and keeping procurement costs down. Other objectives are to expose U.S. industry to international competition to promote innovation and efficiency (which to be credible must allow foreign rivals to win occasionally and displace American producers), and to encourage industrial linkages that enhance U.S. access to global markets." [6]

The danger is that the cost factor is becoming the dominant consideration in decision-making, a trend that could open the door to purchases of Chinese goods in the defense realm as it has already done in the commercial realm. As far back as 1992, then Defense Secretary Dick Cheney objected to "Buy America" provisions of U.S. law because they "raise questions about my spending money on things I could get cheaper elsewhere, and it raises the specter of having to rely upon less than first-rate technology in certain areas."[7] In responding to attempts by the House Armed Services Committee to strengthen Buy American provisions in 2004, then Defense Secretary Donald Rumsfeld argued that such measures "would deny to U.S. forces critical technologies and capabilities obtainable only, or most economically, from non-U.S. sources."[8]

In the Department of Defense's report *Foreign Sources of Supply: Assessment of the United States Defense Industrial Base* published in November 2004, it is said that "none of the identified foreign sources constitutes a foreign vulnerability that poses a risk to national security. The vast majority of the foreign sources are from NATO nations or other historically reliable trading partner nations." But is history the best basis for considering where corporations are likely to want to sub-contract work in the future if left free to do so?

The European defense industry is in deep trouble. It is plagued by local politics, duplicative programs and over a decade of deep cuts in military spending and research. The UK is spending only 2.3% of GDP on defense, and most of continental Europe is spending not much more than 1% (compared to 4.5% of GDP in the United States). With such a small effort, it is going to be difficult to maintain a European defense industry. Thus, European firms are looking to America– and China, to keep themselves in business.

Many firms and some member governments want the European Union to lift its ban on military sales to China. This would give Beijing access to the world's second-best weapons technology and would be a boost over the older Russian systems it has been buying. Though EU exports to China are growing strongly - 21% in 2006 - the EU still exports less to China than it does to Switzerland. The EU bilateral trade deficit with China is growing, following the same trend as the US deficit, increasing about € 350 million a day. A part of this is accounted for by a shift in production from other markets in Asia to China.[9]

China hopes, however, that favorable EU trade action would put pressure on Washington to lift its restrictions, especially with continued pressure from American firms for the relaxation of controls. The Aerospace Industries Association has already stated its position. It supports Washington's efforts to persuade the EU to maintain the embargo, but "If in spite of U.S. arguments, the EU decides to lift its blanket ban on defense exports to China, AIA would then recommend that the U.S. replace its current complete ban with targeted export controls that would be harmonized as closely as possible to the EU." In 2005, AIA President and CEO John Douglass said, "American industry's goal is to make sure any response does not punish the U.S. aerospace industry and further hurt an already fragile trade situation with our European partners."[10] His concern was that "It's unlikely that Congress will allow European companies to have it both ways" selling to both China and the United States.

American firms seeking to outsource more work to foreign "partners"

A coalition of American groups that include major aerospace and defense firms has formed to lobby for a reduction in export and technology control regulations imposed by the U.S. government on both the Munitions List and on "dual use" items. Calling themselves the "Coalition for Security and Competitiveness" the group is headed up by the Aerospace Industries Association and including some seventeen other business associations including the Business Roundtable, the Chamber of Commerce, the National Association of Manufacturers, the National Defense Industries Association, the Electronics Industries Alliance and the Satellite Industries Association among others. In a letter to President George W. Bush on March 6, the coalition stated, "We must continue to protect our sensitive military technologies from our adversaries and rivals, while also maximizing the benefits of trade and technology cooperation with our allies and friends." [11] It seems clear, however, that the coalitions is far more concerned about maximizing benefits to their members than about strengthening protections that would curtail their freedom of action.

The existing regulations are considered relics of the Cold War (a term used often by both American executives and Chinese officials) and no longer suitable for an era of globalization. As Bob Stevens, president of Lockheed Martin, told reporters at the recent Paris Air Show, "international collaboration is essential to finding best value in the supply chain."[12] As the NDIA has argued, any attempt to enforce or strengthen controls or mandate U.S. production of military items would mean, "Defense and non-defense business segments would have to be separated, slowing the development of next-generation war fighting systems and increasing program costs."[13] The corporate model is to have one supply chain for both commercial and government work, with commercial considerations paramount to minimize cost and maximize profits.

It not wise for the United States to risk dependency with European arms makers who are in decline or looking to follow other business firms into co-production agreements with China. America and Asia are the dominant pivot points of the world economy; in terms of economic growth (gross domestic product), technological innovation and industrial production. It is also the center of the largest military challenges in the world. The armaments competition in Asia will be much more intense than in Europe, and will thus stimulate more innovation both in weapons systems and their means of production.

Commercial-off-the-Shelf items open the door for Chinese sourcing

The DoD has become a minor player in many sectors of the U.S. and global economy. Commercial demands are shaping many technology industries more than defense projects. This has led to fewer civilian firms producing military-specific technologies. In the electronics and IT sectors; materials and metals industries; and the machine tool industry, DoD is a small fraction of overall production, and a small factor in development of new products. Since the 1980s, defense policymakers have encouraged the use of more and more commercial-off-the-shelf (COTS) or "dual use" components and products in military systems, largely because of their growing ubiquity in these systems and because innovation appeared to be proceeding faster in civilian industries than in defense-specific industries.

This is not as new a situation as is often supposed. Maurice Pearton, a British scholar associated with Cambridge University and the Institute for Strategic Studies, has argued that this dependence of the nation-state on the capacity of the private sector has existed since the Industrial Revolution, "Small arms excepted, there was, strictly speaking, no armaments industry as such: the new weapons and techniques applied to war were developed at the heavy end of iron and steel manufacture. The facilities which produced cannon were also used for producing locomotives, rails, girders and bridges, boilers and similar industrial goods. Moreover, the centres of this new industrial production were outside the traditional arsenals and shipyards and the nature of their output demanded that they be kept in being, ready for expansion in wartime."[14] Today, the number of industries "outside the arsenals" run by government agencies has expanded along with technology, which means that national security continues to depend not just on a limited number of specified defense industries, but on a deep, innovative, and diversified industrial base.

The RAND Corporation has reported that, "China's emerging IT sector is not an officially designated part of China's defense-industrial complex; however, it is probably the most organizationally innovative and economically dynamic producer of equipment for China's military. And it is at the forefront of China's improving defense-production capabilities. Although IT enterprises are primarily (exclusively, in most instances) oriented toward domestic and international commercial markets, the PLA [People's Liberation Army] has been able to effectively leverage certain IT products to improve the military's command, control, communications, computers, and intelligence (C4I) capabilities—a critical element of the PLA's modernization efforts."[15]

The April MF *Regional Economic Outlook for Asia and the Pacific* finds "the domestic content of Chinese exports is rising fast and the link between Chinese exports and imports is therefore becoming weaker. Although exports continue to be an important engine of growth, they are now increasingly reliant on domestically sourced components rather than imported intermediate goods."[16] This serves to further expand China's trade surplus while adding to Beijing's gains over other Asian economies in the American market. It also means that high-tech components and sub-assemblies that used to be produced in the United States, Taiwan or Southeast Asia, then shipped to China only for assembly, are now being produced in China. The future evolution of this system will be to do more of the design and innovation in China, both to be closer to the final production and because Beijing will demand that technology be shared with local partners.

A major problem with this approach was made clear by a 2002 GAO report on China's semiconductor industry. GAO investigators found that neither Commerce nor Defense Department export control officials have "conducted assessments of the cumulative effect of semiconductor-related technology transfers to China." Commenting on the report, representatives of these agencies plus the State Department confirmed the case-by-case focus. In other words, U.S. officials have not examined whether any series of individual transfers of semiconductor-related technology to China could, when put together, significantly enhance China's capabilities. As the GAO team explained, "[N]o single piece of semiconductor manufacturing equipment exported to China will make a 'significant contribution' to China's

military. Rather, it is the cumulative effect of these exports that raises national security concerns." Given that the semiconductor manufacturing equipment industry consists of highly complex systems incorporating a wide variety of individual components and technologies, acquiring the critical materiel and know-how piece by piece is a highly plausible, indeed likely, scenario.[17]

European-Chinese industrial cooperation raises the danger that U.S. joint programs with NATO allies could serve as a conduit for the transfer of American technology or design secrets to Beijing. Even if specific secrets could be kept (not just under restricted licenses, but from espionage among "partner" firms), the growth of Asia as the rival center to America for innovation and advanced industrial capabilities means that the United States will have to rely primarily on its own resources to confront new challenges from emerging Asian rivals. Europe will be of little help because it is purposely playing a waning role in the global geopolitical competition. This political withdrawal will remove the strong stimulus to innovation that comes from robust government support for military research and procurement. "The European public has no sense of menace and is not yet ready to spend a lot on defense," says retired French Admiral Jacques Lanxade. "But if we don't pay attention, we will have budgets that are even lower, and our defense industry will not survive."[18]

The future belongs to Asia, not Europe

The shift from Europe to Asia as the center of competition and innovation will mean a fundamental change in what kind of joint programs and sub-contracting in which the United States can safely engage. The U.S. alliance system in Asia is not as broad or as deep as in NATO. The risk of depending on Pacific Rim manufacturing centers (Taiwan, Korea, even Japan) which could be in the direct line of fire in regional wars would be high. And clearly, U.S. defense contractors cannot be allowed to establish supply chains for military goods in tandem with their commercial practice in a potentially hostile China. Beijing's desire to build a strong fleet and establish outposts near maritime choke points will mean that the Pacific Rim may not be the secure ocean highway that the Atlantic has become.

The 2006 DoD *Foreign Sources of Supply* study identifies two situations where overseas sources would pose a threat to American security. "1.Foreign sources may pose an unacceptable risk when there is a high "market concentration" combined with political or geopolitical vulnerability. For example, a sole source foreign supplier existing only in one physical location and vulnerable to serious political instability may not be available when needed. ...2. The Suppliers from politically unfriendly or anti-American foreign countries, as defined by statute or U.S. Government policy, are not used to meet U.S. defense needs."[19] China could fall under both of these caveats as its market share in certain industrial sectors increases to where its output is likely to be included in the supply chains of most (if not all) U.S. and European manufacturers.

While caveat 2 might appear to be applicable to China on grounds of common sense, the report actually limits the definition of "politically unfriendly or anti-American foreign countries" to "those Countries categorically excluded from DoD contracts are countries listed as 'terrorist countries' by the Secretary of State under 50 USC App. 2405(j)(1)(A) and countries subject to

sanctions implemented by the Department of Treasury Office of Foreign Asset Controls (OFAC)." According to the report, "Foreign sources are not automatically excluded on the basis of a need to protect classified or unique technologies or products; this must be determined by individual circumstance." China is not listed as a terrorist state, and while certain Chinese firms are under sanction, the country as a whole is not.

Meanwhile, on another front, DoD is attempting to undermine Congressional intent to preserve American industry by exercising its waiver authority to allow foreign procurement. Its latest action involves specialty metals, a sector in which the U.S.-China Commission has also taken an interest. On July 2, DoD posted the following in the Federal Registry: "Exercise of this statutory COTS waiver is critical to DoD's access to the commercial marketplace. Manufacturers make component purchasing decisions based on factors such as cost, quality, availability, and maintaining the state of the art—not the country in which specialty metals in the components were melted. In addition, many commercial items commonly acquired in large quantities by DoD, such as computers, commercial-off-the shelf engines, and semi-conductors, may contain a small percentage of components made of specialty metals, subjecting the manufacturers to costly and burdensome, if not impossible, tracking requirements."[20] If DoD wants to make one exception for one component, why not others, or all? DoD also complains is this same statement about having to go through the lengthy of process of determining that a product is not available from a domestic source before making a foreign purchase.

Yet, in its annual report to the Congress on "The Military Power of the People's Republic of China" in 2004, DoD treated Beijing's imports of weapons systems and critical components as a liability. The Pentagon report states "With few exceptions, such as ballistic missile research, development, and production, most of China's domestic defense industries are inefficient and remain vulnerable to dependencies on foreign suppliers of technology."[21] It also says, "Beijing has active domestic production programs in all major military-industrial sectors, and China currently produces a wide variety of military equipment, including missiles, fighter aircraft, bombers, destroyers, frigates, submarines, tanks, and armored personnel carriers. However, many programs rely on foreign suppliers for critical components, such as engines for its fighters."

So why is not American dependency on imported systems or components in the defense industry not a source of vulnerability? The answer is that it is a source of vulnerability for any country. There is a fundamental difference in direction and motive between Chinese and American enterprises when they seek imports. When advanced countries like the United States or the states of Europe "outsource" military purchases, it is to replace domestic production with foreign production. The home defense industrial base is reduced. When China imports equipment, it is part of Beijing's drive to acquire the means to expand its industrial base through the transfer of the technology embodied in the imported system. The long-term goal is to do more, not less.

Recommendations

Based on the hard lessons learned during the world wars, U.S. leaders resolved to be better prepared for the future. The Defense Production Act (DPA) was adopted in 1950, and has been

renewed continually since, including twice during the current Bush Administration. The DPA's Declaration of Policy states "the vitality of the industrial and technology base of the United States is a foundation of national security that provides the industrial and technological capabilities employed to meet national defense requirements, in peacetime and in time of national emergency."[22] The DPA defines a "domestic source" as "a business concern that performs in the United States or Canada substantially all of the research and development, engineering, manufacturing, and production activities required of such business concern under a contract with the United States relating to a critical component or a critical technology item."

The commercial practices of American firms have been allowed to stray from this ideal, outsourcing a wide array of "production activities" to foreign lands, based mainly on price. The Federal government, including the Department of Defense, has allowed this trend to continue, succumbing to the same false economy, but with less justification. Corporations may not have any higher purpose than to make a profit, but governments have the responsibility to think of the long-term advancement of the nation's capabilities.

There is renewed interest in the DPA in the 110th Congress as part of the effort to safeguard the nation's industrial base which has been ravaged by foreign rivals and the "globalization" of supply chains. The U.S. Business and Industry Council welcomes renewed interest in the DPA as the foundation of America's economic capabilities in a dangerous world torn by cutthroat competition. Any new initiatives under the DPA should include the following considerations:

1. Defense industrial policy must focus more attention on maintaining domestic network of sub-tier producers. As weapon platforms stay in service for decades, being upgraded rather than replaced, the lower tier suppliers of advanced components become the source of new capabilities over the extended life cycle. Prime contractors must not be allowed to squeeze critical suppliers or outsource their work to foreign sites, trading national strength for corporate profits. A deep, diverse and financially healthy American defense industrial base must be the goal of policy.

2. Defense manufacturing programs should address the development and improvement of defense-unique and defense-critical production processes. Government investment is needed to give civilian firms the ability to quickly convert commercial production lines to the higher standards needed for military items. There is a need to regain a substantial mobilization potential that can be sustained during the course of conflicts that can last several years.

3. The defense industry must be treated by the federal government in a fundamentally different way from the commercial sector. It exists solely to serve the national interest and national security, and must be structured and managed accordingly. Waiver authority should be sharply limited, especially for countries that have records as problem traders or as potential military rivals, both of which describe China.

4. Foreign firms which have something of value to contribute to American defense capabilities will be encouraged by the expansion of "buy American" regulations to build

new facilities in the United States or license technology to U.S. firms in order to reach the large DoD market, a development that will deepen the nation's industrial resources.

NOTES

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3. *Foreign Sources of Supply: Assessment of the United States Defense Industrial Base*, Office of the Under Secretary of Defense (Acquisition, Technology & Logistics), Deputy Under Secretary of Defense (Industrial Policy), April 2006, p. ii.

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5. *Defense Trade Data* (GAO-06-319R), General Accountability Office, January 27, 2006, p. 6.

6. *Foreign Sources of Supply*, p. 3.

7. "Cheney: Don't Expect Pentagon to Bail Out Industrial Base" *Aerospace Daily*, January 23, 1992, p. 115.

8. Donald Rumsfeld to Duncan Hunter, July 8, 2003, archived by the National Defense Industries Association, http://www.ndia.org/Content/ContentGroups/Divisions1/Small_Business/PDFs12/04auth_conf_secdef_ltr.pdf. The letter also claims "the provisions could produce a damaging reduction in the DoD supplier base" implying that the U.S. defense industrial base is already very dependent and vulnerable to foreign producers.

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17. EXPORT CONTROLS: Rapid Advances in China's Semiconductor Industry Underscore Need for Fundamental U.S. Policy Review GAO-02-620, General Accountability Office, April 2002, pp. 26, 29, 74.

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22. The text of the Defense Production Act and its amendments can be found at http://www.access.gpo.gov/uscode/title50a/50a_75_1_7_.html.