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The Export Administration Act: Evolution, Provisions, and Debate

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Ian F. Fergusson
Analyst in International Trade and Finance
Foreign Affairs, Defense, and Trade Division

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Summary

The 109th Congress may consider legislation to renew and to reauthorize the Export Administration Act (EAA). On December 16, 2005, H.R. 4572 (Hyde) was introduced and referred to the International Relations Committee. The bill would revise the EAA, especially in the areas of penalties, enforcement, and U.S. policy towards multilateral export control regimes. Through the EAA, Congress delegates to the executive branch its express constitutional authority to regulate foreign commerce by controlling exports. The EAA provides the statutory authority for export controls on sensitive dual-use goods and technologies: items that have both civilian and military applications, including those items that can contribute to the proliferation of nuclear, biological, and chemical weaponry. The EAA, which originally expired in 1989, periodically has been reauthorized for short periods of time, with the last incremental extension expiring in August 2001. At other times and currently, the export licensing system created under the authority of EAA has been continued by the invocation of the International Emergency Economic Powers Act (IEEPA). EAA confers upon the President the power to control exports for national security, foreign policy or short supply purposes. It also authorizes the President to establish export licensing mechanisms for items detailed on the Commerce Control List (CCL), and it provides some guidance and places certain limits on that authority. The CCL currently provides detailed specifications for about 2,400 dual-use items including equipment, materials, software, and technology (including data and know-how) likely requiring some type of export license from the Commerce Department's Bureau of Industry and Security (BIS). BIS administers the Export Administration Regulations (EAR), which, in addition to the CCL, describe licensing policy and procedures such as commodity classification, license applications, and interagency dispute resolution procedures.

In debates on export administration legislation, parties often fall into two camps: those who primarily want to liberalize controls in order to promote exports, and those who believe that further liberalization may compromise national security goals. While it is widely agreed that exports of some goods and technologies can adversely affect U.S. national security and foreign policy, some believe that current export controls can be detrimental to U.S. businesses and to the U.S. economy. According to this view, the resultant loss of competitiveness, market share, and jobs can harm the U.S. economy, and that harm to particular U.S. industries and to the economy itself can negatively impact U.S. security. Others believe that security concerns must be paramount in the U.S. export control system and that export controls can be an effective method to thwart proliferators, terrorist states, and countries that can threaten U.S. national security interests. Controversies have arisen with regard to particular exports such as high performance computers, encryption technology, stealth materials, satellites, machine tools, "hot-section" aerospace technology, and the issue of "deemed exports." The competing perspectives on export controls have clearly been manifested in the debate over foreign availability and the control of technology, the efficacy of multilateral control regimes, the licensing process and organization of the export control system, and the economic effects of U.S. export controls. This report will be updated periodically.

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Introduction

Legislation to rewrite and reauthorize the Export Administration Act of 1979 (EAA)(P.L.96-72) again may be considered in the 109th Congress. On December 16, 2005, H.R. 4572 (Hyde) was introduced and referred to the International Relations Committee. The bill would revise the EAA, especially in the areas of penalties, enforcement, and U.S. policy towards multilateral export control regimes. The EAA provides the statutory authority for export controls on sensitive dual-use goods and technologies, items that have both civilian and military applications, including those items that can contribute to the proliferation of nuclear, biological and chemical weaponry. The EAA, which originally expired in 1989, periodically has been reauthorized for short periods of time, with the last incremental extension expiring in August 2001. At others times, including currently, the export licensing system created under the authority of EAA has been continued by the invocation of the International Emergency Economic Powers Act (IEEPA)(P.L. 95-223).

The EAA is the statutory authority for the Export Administration Regulations (EAR), which are administered by the Bureau of Industry and Security[1] (BIS) located in the Department of Commerce. These regulations establish the framework for regulating exports of dual-use, potentially sensitive commodities, software, computers, and technology. Exports are restricted by item, country, and recipient entity. The EAA, which was written and amended during the Cold War, focuses on the regulation of exports of those civilian goods and technology that have military applications (dual-use items). Export controls under the EAA were based on strategic relationships, threats to U.S. national security, international business practices, and commercial technologies many of which have changed dramatically in the last 20 years. Some Members of Congress and most U.S. business representatives see a need to liberalize U.S. export regulations to allow American companies to engage more fully in international competition for sales of high-technology goods. Other Members and national security analysts contend that liberalization of export controls over the last decade has contributed to foreign threats to U.S. national security, that some controls should be tightened, and that Congress should weigh further liberalization carefully.

This paper discusses the Export Administration Act in terms of its evolution in the 20th century, its major features including the types of controls authorized by the act, the Commerce Control List and export licensing procedures, and issues concerning the maintenance of export controls under IEEPA. It then highlights

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[1] This agency was known as the Bureau of Export Administration prior to April 2002.

several controlled commodities that have been featured prominently in export control discussions. Finally, it discusses competing business and national security perspectives concerning several of more contentious themes in the export control debate: the controllability of technology, the effectiveness of multilateral control regimes, the organization of the export control system, and the impact of export controls on the U.S. economy and business.

The Evolution of the Export Administration Act

Export controls in time of war have been an element of U.S. policy for almost one hundred years.[2] The end of WWII, however, ushered in a new era in which export control policy would become an extensive peacetime undertaking. The start of the cold war led to a major refocusing of export control policy on the Soviet-Bloc countries. Enactment of the Export Control Act of 1949 (P.L. 81-11) was a formal recognition of the new security threat and of the need for an extensive peacetime export control system.

The 1949 Act identified three possible reasons for imposing export controls. Short-supply controls were to be used to prevent the export of scarce goods that would have a deleterious impact on U.S. industry and national economic performance. Foreign policy controls were to be used by the President to promote the foreign policy of the United States. The broad issues of regional stability, human rights, anti-terrorism, missile technology, and chemical and biological warfare have come to be controlled under this rubric. National security controls were to be used to restrict the export of goods and technology, including nuclear non-proliferation items, that would make a significant contribution to the military capability of any country that posed a threat to the national security of the United States.

Coincident with the establishment of the post-war U.S. export control regime was the establishment of a multilateral counterpart involving our NATO allies. The large amount of critical technology being transferred from the United States to the NATO allies, and the growing capability for technological development by the allies themselves required the establishment of a multilateral control regime. Toward this end, the Coordinating Committee for Multilateral Export Controls (CoCom) was established in 1949. CoCom controls were not a mirror image of U.S. controls but generally did reflect a uniformly high level of restrictions.

With little change in the perceived threat, the Export Control Act was renewed largely without amendment in 1951, 1953, 1956, 1958, 1960, 1962, and 1965. With the onset of the U.S.-Soviet era of "detente" in the late 1960s, however, the first serious reexamination and revision of the U.S. export control system occurred. At

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[2] In the first half of the 20th century, war, or the imminent threat of war, led to the Trading With The Enemy Act of 1917 and the Neutrality Act of 1935. In 1940, Congress increased presidential power over the export of militarily significant goods and technology with the passage of P. L. 76-703, "An Act to Expedite and Strengthen the National Defense." In each of these instances the rationale for control was the necessity of not giving aid and comfort to the nation's enemies.

this time, the growing importance of trade to the U.S. economy and those of our allies began to exert significant political pressure for some liberalization of export controls. Congress passed the Export Administration Act of 1969 to replace the near-embargo characteristic of the Export Control Act of 1949. The continued shift of policy toward less restrictive export controls continued in the renewal of the act in 1974 and 1977. The act was comprehensively rewritten in 1979, and this act forms the basis of the export control system today. It was amended in 1985, and some moderate further liberalization occurred in the following years.

The collapse of the Soviet Union in 1989, an event some have partially attributed to the success of U.S. cold war export control policy, marked a dramatic change in the nature of the external threat the United States. Beginning with the George H.W. Bush Administration, the export control system has been reduced in scope and streamlined, but the basic structure of the law remains intact. There are many who see a need to revamp the act, whether to enhance exports, to shift the focus to current national security threats, or to increase penalties for violations.

The dissolution of CoCom in 1994 and its replacement by the Wassenaar Arrangement in 1997, also significantly changed the export control environment.[3] This new multilateral arrangement is more loosely structured than CoCom and members do not have the authority to block transactions of other members. Generally more liberal control practices abroad raise important questions about the ultimate effectiveness of U.S. export controls (under either the current or a revised EAA) in achieving national security objectives and the fairness of unilateral controls to American industry.

Congress has not been able to agree on measures to reform the Export Administration Act that regularly have been introduced since the 101st Congress. The export control process was continued from 1989-1994 by temporary statutory extensions of EAA and by invocation of the International Emergency Economic Powers Act (IEEPA). Thereafter, export controls were continued for six years under the authority of Executive Order No. 12924 of August 19, 1994, issued under IEEPA authority. Many of those who favor reforming the act, whether to liberalize or to tighten controls, contend that operating under IEEPA imposes constraints on the administration of the export control process and makes it vulnerable to legal challenge, thus undermining its effectiveness. (See p.10) Legislation passed by the House and Senate and signed by the President on November 13, 2000 (P.L. 106-508) extended the EAA of 1979 until August 20, 2001, temporarily removing the need to operate the export control system under IEEPA powers. Since then, export control authority has again been operating under IEEPA provisions pursuant to Executive Order 13222, issued August 17, 2001.[4]

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[3] For details on Wassenaar, see CRS Report RS20517, *Military Technology and Conventional Weapons Export Controls: The Wassenaar Arrangement*, by Richard F. Grimmett.

[4] IEEPA provisions are renewed yearly through Presidential determination, the most recent being on August 2, 2005, and contained in 70 *Federal Register* 45273 (August 5, 2005).

Legislation to rewrite the Export Administration Act has been introduced in the last several Congresses. In the 104th Congress, the House passed the Omnibus Export Administration Act of 1996 (H.R. 361) on July 16, 1996, after hearings and consideration by the Committee on International Relations, the Committee on Ways and Means, and by the Committee on National Security. On July 17, 1996, the bill was received by the Senate and referred to the Committee on Banking, Housing and Urban Affairs, which held a hearing but took no further action. Export control legislation (H.R. 1942) was introduced in the 105th Congress, but no action was taken. In the 106th Congress, the Export Administration Act of 1999 (S. 1712) was introduced by Senator Michael P. Enzi. On September 23, 1999 the Senate Banking Committee voted unanimously (20-0) to report this legislation to the Senate floor (S.Rept. 106-180). However, action by the Senate on S. 1712 was not taken due to the concerns of several Senators about the bill's impact on national security.

107th Congress. Export control legislation was again introduced in the 107th Congress. On January 23, 2001, Senator Enzi introduced the Export Administration Act of 2001 (S. 149). Hearings were held on this legislation by the Senate Banking Housing and Urban Affairs Committee in February 2001, and the measure was reported favorably for consideration by the Senate by a vote of 19-1 on March 22, 2001 (S.Rept. 107-10). The Senate debated the legislation on September 4-6, 2001, and it passed with three amendments by a vote of 85-14. This bill was similar though not identical to S. 1712, introduced by Senator Enzi in the 106th Congress.

The House International Relations Committee held hearings on EAA and export controls on May 23, June 12, and July 11, 2002. The House version of the Export Administration Act, H.R. 2581, was introduced on July 20, 2001 by Representative Benjamin Gilman. As introduced, it was identical to S. 149, except for the additions of provisions related to oversight of nuclear transfers to North Korea. At the markup session on August 1, the House International Relations Committee passed the legislation with 35 amendments. The House Armed Services Committee (HASC) and the House Permanent Select Committee on Intelligence(HPSCI) received H.R. 2581 through sequential referral. On March 6, 2002, HASC further amended H.R. 2581 and reported out the legislation by a vote of 44-6 (H.Rept. 107-297). HPSCI held hearings on the legislation but did not alter it. The legislation received no further consideration in the 107th Congress. The Administration supported S. 149 and opposed House attempts to revise it. In the 108th Congress, Representative Dreier introduced EAA legislation (H.R. 55), which was identical to S. 149, but no action was taken on it.

The National Defense Authorization Act (NDAA) has also been used periodically as a vehicle to attempt to amend the export control regime. In 2004, the House version of NDAA 2005 (H.R. 4200) contained two export control-related provisions that would have affected dual-use export controls. The first (Sec. 1404) would have required a license for dual-use goods controlled under the Export Administration Regulations (EAR) for technology and items contained in the Militarily Critical Technology List (MCTL), a list compiled by the Department of Defense (DOD) (see p. 6). The provision is in response to a March 2004 DOD study, which noted that several MCTL technologies were not controlled under the EAR or the International Traffic in Arms Regulations (ITAR). The second provision (Sec. 1405) would have required that exporters obtain licenses for items controlled under

the EAR or the ITAR to a destination if that destination had previously exported such items to China. In addition, the granting of the license would be conditional on the written assurance of the foreign government or entity not to transfer the licensed item without the written consent of the President. The House NDAA report (H.Rept. 108-491) expresses concern that military embargoes on China imposed after the Tiananamen Square massacre may be repealed which may lead to the transfer of such U.S. goods or technology to China. However, neither of these provisions were contained in the conference report (H.Rept. 108-767) signed by the President on October 28, 2004.

H.R. 4572. A bill to revise and extend the Export Administration Act was introduced by Representative Henry Hyde on December 16, 2006, and was referred to House International Relations Committee. It is not a comprehensive overhaul of 1979 EAA, but rather one that addresses penalties, enforcement, and the relation of the United States to multilateral control regimes. According to an administration official, the legislation reflects "targeted changes ... that all sides can be supportive of."[5] The legislative addresses three areas of export controls: penalties, enforcement, and multilateral export control regimes. The bill also extends the expired EAA for two years from the date of enactment, and provides authorization of appropriations for export control activities.

Penalties. The proposed legislation would revise the penalty structure and increase penalties for export control violations. The bill raises criminal penalties for individuals to the greater of $1 million or 10 times the value of the export, and the term of potential imprisonment to ten years. For firms, it raises penalties to the greater of $5 million or 10 times the value of the export. Previously, the base penalty was the greater of $50,000 or 5 times the value of the export, or five years imprisonment. Certain violations, such as those for exports controlled for foreign policy purposes could receive higher penalties. The bill also raises civil penalties from $10,000 (or $100,000 for national security controls violations) to $500,000, and it expands the list of statutory violations that could result in a ten-year denial of export privileges.

Enforcement. The bill also restates the enforcement provisions to account for the current bureaucratic structure of Customs in the Department of Homeland Security. It directs the Secretary of Commerce to publish and update best practices guidelines for effective export control compliance programs. It also expands the confidentiality provisions beyond licenses and licensing activity to include classification requests, enforcement activities, or information obtained or supplied concerning U.S. multilateral commitments. The bill includes new language governing the use of funds for undercover investigations and operations and establishes audit and reporting requirements for such investigations. It also authorizes wiretaps in enforcement of the act. Finally, the bill establishes an export enforcement fund using proceeds from civil violations to fund investigative activity.

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[5] Peter Lichtenbaum, Assistant Secretary for Export Administration, "Administration Will Press Congress to Renew EAA, but no Major Reform in Sight," *International Trade Reporter*, January 19, 2006.

Multilateral Control Regimes. The legislation establishes objectives for U.S. participation in multilateral export control regimes. The bill seeks to insure that multilateral export control regimes support the national security goals of the United States through elucidation of common procedures, features, standards, and reporting requirements.

Analysis of Provisions in EAA Legislation

Several principles and concepts have been common to the EAA and to efforts to renew and reauthorize the legislation. Generally, these provisions set out the types of export controls authorized (including national security, foreign policy and short supply controls), licensing procedures, the license review process, and penalty and enforcement procedures, the latter currently subject to IEEPA authority.

Types of Control Authority

Since the 1949 Act, U.S. dual-use export controls have restricted certain items based on national security, foreign policy, or for the effect of domestic exports on the national economy. These three categories form the basis by which items on the Commerce Control List (CCL) (see below, p. 7) and items subject to the Export Administration Regulations are controlled. In practice, the preponderance of items on the CCL are controlled for both national security and foreign policy reasons with different control standards determining the licensing policy of an item to a particular country.

National Security Controls. The 1979 Act restricted the export of goods or technology that could make a significant contribution to the military capabilities of any other country or groups of countries that would prove detrimental to the national security of the United States. National security control items fall under the National Security licensing requirement of the EAR. The list "Country Group D-1" presently serves as the list of controlled countries.[6] Licenses for items controlled for national security purposes are reviewed on a case-by-case basis and are approved if it is determined the item is destined for civilian use or would not make a significant contribution to the military potential of the country of destination.[7]

Pursuant to EAA, the goods and technology to be controlled for national security purposes are identified by the Secretary of Defense and other appropriate agencies. The Secretary of Defense and the Secretary of Commerce (the Secretary) are obligated by the act to periodically review and revise the list. For this purpose,

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[6] This list currently includes Albania, Armenia, Azerbaijan, Belarus, Bulgaria, Cambodia, China (PRC), Estonia, Georgia, Iraq, Kazakhstan, Kyrgyzstan, Laos, Latvia, Lithuania, Macau, Moldova, Mongolia, North Korea, Roumania, Russia, Tajikistan, Turkmenistan, Ukraine, Uzbekistan, and Vietnam. (EAR 15 C.F.R. 740, Supplement 1).

[7] EAR, 15 C.F.R. 742.4.

the Secretary of Defense maintains the Military Critical Technology List (MCTL).[8] The national security based control list is also consistent with the control list of the Wassenaar Arrangement. U.S. national security controls, however, do not cover items that are covered under nuclear, chemical, biological or missile proliferation regimes, or to countries covered by anti-terrorism controls. These items and destinations are controlled for foreign policy purposes.

Foreign Availability. Items controlled for national security purposes are subject to a foreign availability determination. Foreign availability exists when a good is available to controlled countries from sources outside the United States in "sufficient quantity and comparable quality" so that control of the item would be ineffective.(Sec. 5(f)(1)(a)) The 1979 Act charges the Secretary, in conjunction with the Secretary of Defense and other appropriate agencies, with determining on a continuing basis whether any item currently subject to export control for reasons of national security meets foreign availability status. Under EAA, a request to make a foreign availability determination can be made by a license applicant or through the initiative of the Secretary. If the Secretary makes a foreign availability determination, the item must be decontrolled, although the President can overturn that decision with a determination that decontrolling such items would be detrimental to the national security of the United States. In such case, the President is directed to enter negotiations with multilateral control partners to eliminate the availability in question.

The 1979 EAA provided for the decontrol of items on the CCL determined to have foreign availability, and it set guidance for the Secretary to make such determinations. It gave the Secretary the ability to initiate such determinations and it provided that license applicants could petition the Secretary to begin the determination. The Secretary's determination of foreign availability does not need the concurrence of other agencies, but he must submit determinations to other agencies as the Secretary considers appropriate. The bill also created the Office of Foreign Availability to gather data for the Secretary to make foreign availability determinations and to report to Congress on operations and improvements on the ability to assess foreign availability. This office no longer exists. According to one commentator, "this is, no doubt, largely because substantial activity in the 1980s and early 1990s produced only meager results."[9]

Mass Market. The concept of mass market status was proposed in EAA legislation introduced in the 106th and 107th Congress. Neither the 1979 EAA nor current regulations provides for decontrol of items based on mass market criterion. Mass market status was defined to apply to items produced or made available for sale in large volume or to multiple buyers. Under legislation introduced in the 106th and 107th Congress, the item's manner of distribution; its conduciveness to commercial shipping; or its usefulness for intended purposes without modification or service were also criteria considered when determining mass market status. This feature proved to have been a controversial part of the legislation, and was cited as

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[8] The list can be seen at [http://www.dtic.mil/mctl].

[9] William A. Root, United States Export Controls (Fourth Edition), (Aspen Law and Business Publisher), 4-21 (2001 Supplement).

a stumbling block in negotiations over the bill in the 107th Congress with some Members arguing that its existence would provide for wholesale decontrol of sensitive items.

Foreign Policy Controls. The EAA authorizes the President to control exports for the purpose of promoting foreign policy objectives, complying with international obligations, or deterring and punishing terrorism. Currently, foreign policy controls are in place for anti-terrorism, regional stability, crime control, United Nations sanctions purposes, unilateral embargoes and sanctions, and non-proliferation objectives. This latter category includes adherence to multilateral non-proliferation agreements in the areas of chemical and biological weapons, nuclear proliferation, and missile technology.

The EAA attaches limitations on the use of foreign policy controls. Foreign policy controls must be renewed on a yearly basis.[10] It requires the President to clearly state objectives and criteria for controls to be reported to Congress. It directs the President to engage in negotiations to remove the foreign availability of items controlled for foreign policy purposes, and it requires the President to impose controls to comply with international obligations or treaties. Furthermore, it requires a license for the export of certain items to countries that support international terrorism. Additionally, foreign policy controls are not authorized for sales of medicine or medical supplies, donations of food, medicines, seeds, and water resource equipment intended to meet basic human needs, or for sales of food if the controls would cause malnutrition or hardship. Controls on sales of agricultural products and medicines have been further amended by the Trade Sanctions Reform and Export Enhancement Act of 2000 (Title IX, P.L. 106-387).[11]

Enhanced Proliferation Control Initiative. Controls based on the end-use or end-user of an item (also known as catch-all controls) are also administered as foreign policy controls. They were introduced under the Enhanced Proliferation Control Initiative (EPCI) of 1991, and they are contained in Part 744 of the EAR. Catch-all controls require a license for export or reexport of any item, not just specifically controlled items, if the applicant knows or is informed by BIS that item will be used for nuclear, missile, chemical or biological proliferation activities. The Bureau of Industry and Security (BIS) maintains an end-user list of entities requiring licenses subject to EPCI.[12] Current regulations prescribe a presumption of denial for licenses to certain entities in Russia, China, Pakistan, India, and Israel and to foreign terrorist organizations as designated by the Secretary of State.

Short Supply Controls. The 1979 EAA authorized restriction on the export of goods and technology to protect domestic industry from shortages of scarce

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[10] For a description of the full range of foreign policy controls implemented, see BIS, Foreign Policy Report 2004, available at [http://www.bis.doc.gov/PoliciesAndRegulations/04ForPolControls].

[11] See CRS Issue Brief IB10061, *Exempting Food and Agricultural Products from U.S. Economic Sanctions: Status and Implementation*, by Remy Jurenas.

[12] EAR, 15 C.F.R. 744, Supplement 4.

materials and the potential inflationary impact of foreign demand. Few short-supply controls remain in force; they include restrictions on exports of crude oil, petroleum derivatives, unprocessed western red cedar, and the export of horses by sea.[13] The EAA legislation proposed in the 107th Congress did not provide for short-supply control authority.

The Control List and Licensing Procedures

Within the Department of Commerce, the Bureau of Industry and Security administers the license application process. In FY2005, BIS reviewed 16,719 applications with a total value of approximately $36 billion, which included $23 billion in licenses for crude oil exports in return for refined petroleum. The value of dual-use technology licenses, approximately $13 billion, represented 1.4% of total U.S. exports in FY2005. BIS approved 14,100 (84%), denied 239 (1.4%), and returned 2,380 (14%) license applications. Most applications for licenses are referred to other government agencies for evaluation, extending the length of the review process. The average processing time for referred license applications was 31 days, down from 36 days in FY2004. China was the largest destination for controlled goods with 1,303 licenses approved valued at $2.4 billion, approximately 6% of the value of total exports to China in FY2005. The greatest number of approved license applications to all destinations was for thermal imaging and light intensive cameras, accounting for 2,413 applications with a value of $68.2 million.[14]

Commerce Control List. The 1979 EAA directed the Secretary of Commerce (Secretary) to create a control list, known in the Export Administration Regulations as the Commerce Control List). The CCL includes items controlled for national security, foreign policy, and short- supply purposes. Under foreign policy controls, it incorporates the control lists of the multilateral non-proliferation regimes to which the U.S. adheres. The CCL currently provides detailed specifications for about 2,400 dual-use items including equipment, materials, software, and technology (including data and know-how) likely requiring some type of export license. The description of the item also enumerates the control(s) applicable to the item. In many cases, items on the CCL will only require a license if going to a particular country. In addition, items on the CCL often are eligible for license exceptions, a practice that, while not requiring prior approval for an export, vests exporters with certain due diligence and record-keeping requirements related to a given transaction. Yet some products, even if shipped to a friendly nation, will require a license due to the high risk of diversion to an unfriendly destination or because of the controversial nature of the product. The end-use and the end-user can also trigger a restriction. The CCL is periodically updated (with the benefit of significant input from other government agencies) to decontrol broadly available items and to focus controls on critical technologies and on key items in which the targeted countries are deficient.

Commodity Classification. The process by which an item is placed on the CCL is known as commodity classification. This process has engendered

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[13] EAR, 15 C.F.R. 754.

[14] BIS, 2005 Annual Report, p.5 [http://www.bis.doc.gov/News/2006/annualReport/BIS_annualReportComplete05.pdf].

considerable controversy in the debate over the EAA. The commodity classification process directs the exporter to request from BIS a recommended classification for an export item if that item does not correspond to an existing CCL listing. BIS is required to refer these requests to State and Defense under certain referral criteria promulgated in 1996. Commerce was criticized by the General Accounting Office (GAO) and by a select committee of the U.S. House of Representatives investigating improper transfers of U.S. technology to China (the Cox Commission) for the low number of classifications the agency referred.[15] Because of the differing licensing requirements at State and Commerce, a classification decision that excludes input from State and Defense may contribute to the export of items that, if referred, may be found to fall under the jurisdiction of the State Department's International Traffic in Arms Regulations.

License Review Procedures. The EAA and the implementing Export Administration Regulations (EAR) establish policies and procedures for the review of license applications and the resolution of interagency disputes. Procedures currently employed were created by Executive Order 12981,[16] as amended, of December 6, 1995. These procedures confer on the Secretary of Commerce (the Secretary) the power to review and to determine the disposition of export licenses. The Departments of State, Defense, and Energy have authority to review any licenses submitted, and the Secretary may refer licenses to others as he deems appropriate. These agencies may waive their right to review license applications for certain commodities or to certain destinations.

Within nine days of a license application's registration, the Secretary must seek additional information, refer the application to other agencies, assure the security classification is correct, return the application if a license is not required, grant the application, or notify the applicant of denial. In case of review by another agency, the reviewing agency must request any additional information from the Secretary within 10 days. After reviewing the file, the reviewing agency may request additional information which the Secretary shall promptly request from the applicant.

Within 30 days of receipt of the application, or of requested review information, the agency must recommend approval or denial of the application, and provide regulatory or statutory justification for a denial. If an agency fails to provide a recommendation within 30 days, the agency is deemed to have no objection to the decision of the Secretary. However, the license application is subject to several actions that can 'stop the clock' on the license application.

Dispute Resolution. The 1995 Order created a three-level interagency dispute resolution mechanism. The top tier of this structure is the Export Administration Review Board (EARB), an entity itself created by Executive Order

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[15] See GAO Report 02-996, Export Controls: Processes for Determining Proper Control of Defense Related Items Need Improvement, Sept. 2002; H.Rept. 105-851, U.S. National Security and Military/Commercial Concerns with the People's Republic of China, May 25, 1999.

[16] EAR, 15 C.F.R. 750.4.

in 1970.[17] The Board consists of the Secretary, who serves as Chair, and the Secretaries of State, Defense, and Energy. The Chairman of the Joint Chiefs of Staff and the Director of Central Intelligence are non-voting members. The Board may also invite the heads of other agencies to participate as appropriate. Under the EARB is the Advisory Committee on Export Policy (ACEP), which consists of the Assistant Secretary for Export Administration, who serves as Chair, as well as the relevant assistant Secretaries and appropriate officials from the agencies represented in the EARB. The Operating Committee (OC) of the ACEP is the third tier which is made up of representatives of the departments listed above. The Chair is selected by the Secretary of Commerce and serves as the Executive Secretary of ACEP.

The dispute resolution process begins with the OC. The Chair reviews the recommendations of the examining departments and informs them of his decision within 14 days of the deadline for receiving agency recommendations. Any reviewing department may appeal the decision of the Chair to the ACEP. An appeal may be made within five days by an appointee of the President and must state the statutory or regulatory basis for the appeal. The ACEP members review recommendations and information and vote on the application within 11 days of such an appeal. Within five days of a majority decision of the ACEP, a department head of a dissenting agency may appeal the decision to the Secretary. Within 11 days of such an appeal, the EARB must decide by majority vote on the disposition of the application. A member of EARB may appeal this decision to the President within five days of the application. The interagency appeal process must be completed within 90 days of the registration of the application. However, the Order does not set a time frame for Presidential consideration of a license decision.

BIS's denial of an export license must be explicitly supported by the statutory and regulatory basis for the denial, giving specific considerations and modifications that would allow BIS to reconsider an application. An explicit appeal procedure is specified in the EAR. One possible basis for appeal is an assessment of foreign availability (see above, p.5). If the item in question can be shown to be readily available from a non-U.S. source in sufficient quantity and of comparable quality then a license denial may, in some cases, be reversed. In FY2005, BIS reported that 165 cases were escalated to the OC, and that a further 15 were examined by the ACEP.[18]

Issues Concerning IEEPA[19]

When the 1979 EAA first expired in September 1990, President George H.W. Bush extended existing export regulations by executive order, invoking emergency authority contained in the International Emergency Economic Powers Act (IEEPA).[20]

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[17] Executive Order 11533, June 4, 1970; continued by Executive Order 12002, July 7, 1977.

[18] BIS, 2005 Annual Report, p. 6.

[19] This section was written by Jeanne Grimmett, Legislative Attorney, American Law Division.

[20] 50 U.S.C. §§ 1701 et seq. See Exec. Order No. 12730, 55 Federal Register 40373 (1990).
(continued...)

As required by IEEPA, the President first declared a national emergency "with respect to the unusual and extraordinary threat to the national security, foreign policy and economy of the United States" posed by the expiration of the act. IEEPA-based controls were later terminated during two temporary EAA extensions enacted in 1993 and 1994 as Congress attempted to craft new export control legislation.[21] After the second extension expired in August of 1994, President Clinton reimposed controls under IEEPA.[22] During this period, a major restructuring and reorganization of export control regulations was published as an interim rule in the March 23, 1996 *Federal Register*. On November 11, 2000, President Clinton signed legislation to extend the authority of the 1979 Act until August 20, 2001,[23] when emergency controls were renewed by President George W. Bush pursuant to Executive Order 13222. Several deficiencies have been noted in maintaining export controls under IEEPA authority:

- Penalty authorities under IEEPA are substantially lower than under the EAA and thus have less of a deterrent effect. IEEPA limits civil penalties to $10,000, willful violations to $50,000, and 10 years' imprisonment if the violator is an individual or corporate officer who has knowingly participated in a violation. Equivalent penalties under the EAA limit civil penalties to $10,000, or $100,000 for violations involving national security controls, and willful violation to $250,000 and 10 years' imprisonment for individuals and $1 million or 5 times the value of exports for firms. Even the higher EAA penalties have lost some of their deterrent effect due to erosion by inflation.

- The police power of enforcement agents lapsed with the EAA. Under IEEPA, these agents must obtain Special Deputy U.S. Marshal status in order to function as law enforcement officers, a complication that consumes limited resources better used on enforcement.

- IEEPA does not authorize the President to limit the jurisdiction of federal courts and thus does not permit him to extend the EAA's general denial of judicial review. In addition, IEEPA does not have an explicit confidentiality provision to authorize protection from

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[20] (...continued)
The use of IEEPA authorities to extend expired export controls was anticipated by Congress in the legislative history of IEEPA. See H.Rept. 95-459 at 13.

[21] P.L. 103-10; P.L. 103-277.

[22] "Continuation of Export Controls," Exec. Order No. 12924, 59 Federal Register 43437 (1994); Message from the President, Sept. 11. 1998, "Continuation of National Emergency Regarding the Lapse of the Export Administration Act of 1979," Ex. Com. 10845, H.Doc. 105-303.

[23] P.L. 106-508.

public disclosure of information pertaining to the export license applications and enforcement.[24]

- The IEEPA does not explicitly authorize the executive to implement provisions to discourage compliance with foreign boycotts against friendly countries.

- It has been argued that the United States sends the wrong message to other countries by not enacting appropriate legislation. Although the United States has been urging countries such as Russia, Kazakhstan, Ukraine, and China to strengthen their export control laws and implementing regulations, goes the argument, U.S. export controls laws have expired and U.S. credibility is diminished by its lack of a statute.[25]

Technology and Commodities of Concern

Controversial exports have included telecommunications and advanced electronic equipment, precision machine tools (especially computer assisted machines), guidance technology (including Global Positioning System technology), aerospace and jet engine technology, synthetic materials (especially high-strength, light-weight, heat- and corrosion-resistant materials), specialized manufacturing and testing equipment (including mixers, high temperature ovens, heat and vibration simulators). In the last few years, congressional attention has focused on the following goods and technologies:

High Performance Computers (HPCs).[26] These technologically advanced computers can perform multiple, complex digital operations within seconds. Sometimes also called supercomputers, HPCs are actually a wide range of technologies that also include bundled workstations, mainframe computers, advanced microprocessors, and software. Until recently, the benchmark used for gauging HPC computing performance has been the standard known as millions of theoretical operations per second (MTOPS). The actual MTOPS performed by an HPC over a period of time can vary, based on which operations are performed (some can take longer than others or can be performed while other operations are taking place) and

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[24] In a recent case, however, the U.S. Court of Appeals for the District of Columbia upheld the authority of the Commerce Department to withhold information on export license applications under the Freedom of Information Act exemption for matters specifically exempted from disclosure by statute, notwithstanding the lapse of the EAA. Wisconsin Project on Nuclear Arms Control v. U.S. Dep't of Commerce, 317 F.3d 275 (D.C.Cir. 2003).

[25] Testimony of William A. Reinsch the Under Secretary for Export Administration, Department of Commerce on the Reauthorization of the Export Administration Act of 1979 (EAA), before the Senate Committee of Banking, Housing and Urban Affairs, Subcommittee on Trade and International Finance, on Jan. 20, 1999.

[26] For additional information, see CRS Report RL31175, *High Performance Computers and Export Control Policy: Issues for Congress*, by Glenn McLoughlin and Ian F. Fergusson (hereafter cited as CRS Report RL31175).

the real cycle speed of the computer. However, the Wassenaar Arrangement approved a new standard for calculating computing power in December 2005, which was incorporated into a BIS final rulemaking on April 24 2006.[27] The new standard, called adjusted peak performance (APP), is the "adjusted peak rate at which digital computers perform 64-bit or larger floating point additions and multiplications," and is measured by a metric known as "weighted teraflops"(WT).[28] The control level is set at 0.75 WT, a level which BIS states "continues to control high-end proprietary HPCs, such as those used by the Department of Defense and the Department of Energy for advanced research, development, and simulation."[29] This level replaces the 190,000 MTOPS benchmark level of January 2002. The level for computer software and technology is set at 0.04 WT and for computer development and production technology at 0.1 WT.

Since the advent of HPC technology, there have been restrictions on U.S. exports. However, some advocates have maintained that because the computing capabilities of HPCs have advanced so rapidly, and due to the foreign availability of models comparable to some of those produced in the United States, export restrictions of HPCs are neither practical or enforceable. During the Clinton Administration, HPC export thresholds — or the amount of MTOPS capability that an HPC would need to require a license — were raised several times. The last change to the MTOPS level was in January 2002, when the Bush Administration raised the threshold for HPC exports to Tier 3[30] countries to 190,000 MTOPS, up from 2,000 MTOPS in 1995.[31] (This process of decontrol has had a significant regulatory impact on BIS. It reports that in 1993 over 11,000 (42% of total license applications that year) were for computer assemblies and hardware; by 2003, that number had dropped to 14 license applications for the category that year.)[32] Despite the conversion to the WT metric, changes in the control level are still subject to the notification requirements of Title XII (B) of Division A of the National Defense

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[27] 71 *Federal Register* 20876, April 24, 2006.

[28] "Wassenaar Arrangement Technical Note on 'Adjusted Peak Performance'" in *The Export Practicioner*, January 2006, p. 22.

[29] 71 *Federal Register* 20878, April 24, 2006.

[30] For HPCs, the Commerce Department organized countries of destination into 4 tiers with increasing levels of export control. These range from a no-license policy for HPC exports to Tier 1 countries (Western Europe, Australia, Mexico, Japan, and New Zealand) to the virtual embargo for exports to Tier 4 countries (Cuba, Iran, Iraq, Libya, North Korea, Sudan, and Syria). Tier 3 countries, including China, Russia and other countries of the Commonwealth of Independent States (CIS), India, and Pakistan, were subject to a dual control system distinguishing between civilian and military end-users and end-uses until 2000. In January 2001, President Clinton merged the Tier I and Tier 2 categories and effectively decontrolled exports to those countries.

[31] For a summary of changes to HPC controls, see CRS Report RL31175, and Bureau of Industry and Security, "High Performance Computer Export Controls," [http://www.bis.doc.gov/HPCs/Default.htm]

[32] BIS, 2003 Annual Report, [http://www.bis.doc.gov/news/2004/03annualrept/index.htm#Chap2]

Authorization Act of 1998 (NDAA98), which allows implementation of the new performance level 60 days after a report has been submitted to Congress.[33]

The National Defense Authorization Act of 1998 (NDAA98) imposed special conditions on the export of high performance computers. This Title (a) requires the prior notification requirement for exports of HPCs above the MTOPS threshold to Tier III countries. Under this provision of NDAA, exports of these HPCs are subject to the approval of the Secretaries of Commerce, Defense, Energy, and State; (b) imposes post-shipment verification requirements for these HPCs; and (c) imposes the requirement to notify Congress of an adjustment in the MTOPS threshold levels. Each version of EAA in the 107th Congress provided for the repeal of NDAA98 provisions.

Encryption. Encryption is the process of encoding electronic messages to transfer important information and data securely. "Keys" are needed to unlock or decode the message. Encryption is an important element of e-commerce security, however this technology is also central to cryptography and could affect military code-breaking capabilities. The increased civilian importance of encryption technology resulted in the transfer in control authority of certain encryption technology from the Department of State to the Department of Commerce by Executive Order 13026 on November 16, 1996. Since that time, there have been several decontrols of encryption items and technology, most recently in June 2002 to reflect changes in the control list of the Wassenaar Arrangement. The result of these actions has been the progressive decontrol of "retail" or "mass market" encryption technology. Currently, retail encryption products and technology can be exported to western countries[34], and to non-governmental end-users in other countries through a license exemption that requires notification of the transaction. Licenses for encryption products and technology continue to be required for countries covered by anti-terrorism controls.

Stealth Technology and Materials. Stealth design incorporates materials, shapes, and structures into a functional system to protect it against electronic detection. Stealth technology falls into two categories. Certain stealth materials can deflect an incoming radar signal to neutral space thus preventing the radar receiver from "seeing" the object. Conversely, other materials may absorb incoming radar signals preventing them from reflecting back to the receiver. Stealth related commodities are sensitive from an export control perspective because some materials and processes involved have civil applications that make it difficult to control dissemination and retain U.S. leadership in this technology. Concerns over the potential export of this material led the Department of State to reclassify certain stealth-related technology as munitions in the 1990s.[35]

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[33] The National Defense Authorization Act of 2001 lowered the notification requirement from 180 to 60 days, H.Rept. 106-945, Sec. 1234, Oct. 6, 2000. The WT metric conversion notification was sent to Congress on February 3, 2006.

[34] European Union countries, Australia, Czech Republic, Hungary, Japan, New Zealand, Norway, Poland, and Switzerland.

[35] For further discussion, see GAO Report NSIAD 95-140, Export Controls: Concerns over
(continued...)

Satellites. Congress has debated the issues of how strictly to control exports of commercial communications satellites and whether monitoring of foreign launch operations has been effective in preventing disclosures of missile secrets. In 1998, the Cox Committee found that U.S. satellite manufacturers provided missile design information and skills to China through the improper transfer of launch failure analysis.[36] Exports of satellites were licensed by the Department of Commerce from late 1996 until March 1999. In October 1998, Congress returned the authority, effective March 15, 1999, to license exports of commercial communications satellites to the Department of State which had traditionally licensed missile technology exports.[37] The satellite industry claims that this transfer has led to licensing delays and lost sales resulting from regulatory uncertainty, and they have lobbied to reverse export controls to Commerce.[38] Satellites launched for commercial communication purposes may contain embedded sensitive technology such as positioning thrusters, signal encryption, mating and separation mechanisms, and multiple satellite/reentry vehicle systems. As stand-alone items, these technologies are controlled under the U.S. Munitions List. One version of EAA legislation in the 107th Congress proposed to transfer the licensing of commercial communications satellite sales back from State to Commerce.

Machine Tools. This category covers manufacturing technology such as lathes and other manufacturing equipment used to produce parts for missiles, aircraft engines and arms. This capital equipment is increasingly sophisticated, employing advanced computer software and circuitry. The industry has been vocal in claiming that its competitive position has been hampered by the lack of multilateral controls over sales of this equipment, especially the lack of consensus on controls regarding China.[39]

Aerospace. "Hot section" technology is used in the development, production and overhaul of jet aircraft both military and commercial. Technology developed principally by the Department of Defense is controlled by the U.S. Munitions List. However, technology actually incorporated in commercial aircraft is regulated by the Department of Commerce and falls under a separate foreign policy-based control category. During debates on EAA legislation in the 106th Congress, several senators raised concerns about the possible decontrol of this technology and sought a "carve-

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[35] (...continued)
Stealth Related Exports (May 1995).

[36] H.Rept. 105-851, U.S. National Security and Military/Commercial Concerns with the People's Republic of China, May 25, 1999.

[37] Required by the National Defense Authorization Act for FY1999, P.L. 105-261.

[38] Satellite Industry Association, "Satellite Export Licensing: The Impact of Federal Export Control Laws on the California Space Industry," Presentation, February 2001.

[39] See Paul Freedenberg, Testimony before the Senate Banking Committee, Feb. 7, 2001, [http://www.senate.gov/~banking/01_02hrg/020701/index.htm] (hereafter Freedenberg).

out" of hot section and other sensitive technologies that would prevent such items from being decontrolled.[40]

Deemed Exports. Exports of technology, know-how, and non-encryption source code is "deemed" to have been exported when it is released to a foreign national within the United States. Such knowledge transfers are regulated by the Export Administration Regulations,[41] which require that a license must be obtained by U.S. entities to transfer technology to foreign nationals in the United States if the same transfer to the home country of the foreign national would require a license. Deemed exports are not expressly mentioned in the 1979 EAA. House versions of EAA in the 107th Congress sought to explicitly define deemed exports as exports falling under the jurisdiction of the act. Processing deemed export license applications has become a larger part of BIS activity. In FY2005, BIS reviewed 707 deemed export licenses (4.2% of the total licenses submitted to BIS) and reports that nearly 60% of deemed licenses reviewed were for Chinese nationals.[42]

In March 2005, BIS established a rule-making procedure in response to an Inspector General's (IG) report,[43] which recommended that BIS alter the standard governing which foreign nationals are subject to export controls. Currently, foreign nationals are subject to export controls requirements based on their country of citizenship or permanent residency; however, the IG recommended that country of birth should be the standard used. According to the IG, foreign nationals from controlled destinations could access technology without scrutiny if they first establish permanent residency in a third country, and foreign nationals from controlled destinations often have dual nationalities. However, Under Secretary of Commerce David McCormick announced in December 2005 that deemed export controls would continue to be based on country of citizenship or permanent residency, not place of birth.[44]

Competing Perspectives in the Export Control Debate

A principal theme in debates on export administration legislation is the tension between commercial and national security concerns. These concerns are not mutually exclusive, and thus it is often difficult to characterize opposing camps. For example, nearly everyone favors reform of the current system, yet no one considers themselves opposed to national security. Generally, however, many who favor reform of the

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[40] "Sen. Warner Says Agreement Near On Bringing EAA Bill to Floor This Week," 17 International Trade Reporter 340, Mar. 2, 2000.

[41] EAR 15 C.F.R. 734.2

[42] BIS, 2005 Annual Report, p.5.

[43] *Deemed Export Controls May Not Stop the Transfer of Sensitive Technology to Foreign Nationals in the United States*, (IPE-16176, March 2004).

[44] David McCormick, "Foreign Talent Need Not Threaten Security," *Financial Times*, December 13, 2005.

current export control accept the business perspective that such reform would assist U.S. business to compete in the global marketplace. Others view the issue more from a national security perspective. To this group, reform should be concerned less with the abilities of U.S. industry to export and more with effective controls placed on potential exports to countries that threaten the security of the United States, terrorists, violators of human rights, and proliferators of weapons of mass destruction. From these different perspectives, controversies arise regarding the controllability of technology, the effectiveness of multilateral regimes, the bureaucratic structure of the licensing process and the impact of export controls on the U.S. economy.

Foreign Availability and the Controllability of Technology. The foreign availability and mass market provisions of EAA reauthorization legislation, and the underlying concept of the controllability of technology, have proved controversial in the EAA debate. Industry groups that have taken an active position on legislation to replace the 1979 EAA have considered the adoption of these provisions as a key benefit of potential EAA legislation. The foreign availability and mass market concepts are integral to their contention that the flow of technology cannot be effectively controlled, and that U.S. dominance of cutting-edge technology can no longer be assumed. According to their arguments, unilateral controls will not stop other countries from obtaining advanced technology. Advocates of this viewpoint claim that "countries of concern" will simply obtain this technology from other nations. Adherents to this view regard current multilateral controls on dual-use articles as ineffectual. From this perspective, only American business suffers from the unilateral nature of U.S. export controls. In the process, foreign business wins new markets or gains an incentive to enter new markets.[45]

According to the industry position, unilateral export controls are also becoming increasingly unworkable as the economy undergoes globalization. The current export control system is predicated on goods being manufactured or assembled in one country. In many industries, however, component parts are manufactured worldwide and are considered commodities. If these parts are not available from one source on a timely basis, they can be obtained elsewhere.[46] Purchasing managers at Daimler Chrysler Aerospace, for example, reportedly have been instructed to reduce dependence on American components for defense and space technology products because of delays associated with American licensing procedures.[47]

Other participants in the export control debate are concerned about the mass market and foreign availability arguments advanced by industry proponents. Critics charge that the mass market standard would effectively nullify the whole U.S. control regime by decontrolling any item that met the criteria under the law. They assert that

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[45] For examples of this argument see, Prepared Statement of Dan Hoydosh, co-chairman of Computer Coalition for Responsible Exports, in Senate Banking Committee, Reauthorization of the Export Administration Act, S.Hrg. 106-461, Mar. 16, 1999 (Reauthorization).

[46] Hamre, John, Testimony before the Armed Services Committee, Feb. 28, 2000, transcript, p. 31-33.

[47] Douglass, John W., prepared testimony before the Armed Services Committee, Feb. 28, 2000, p.3.

virtually any product, including dual-use items used for proliferation purposes, could qualify for mass market status. Similarly, as one non-proliferation advocate testified regarding EAA legislation in the 106th Congress, the foreign availability criterion would allow the sale of "anything a controlled country can purchase from a rogue buyer."[48]

A related argument made by industry is that national security is enhanced by robust export industries. This argument is predicated on the changing nature of defense procurement, research and development. During the Cold War, the formative period of the current export control regime, the military conducted considerably technical research on its own and provided funds for research and development. Now that situation is largely reversed. The military now purchases many items 'off-the-shelf' and relies to a greater extent on commercial applications. Industry argues that it is in the national security to sell current technology to generate funds to develop future technology. If American firms are competitively hindered because of export controls, the argument goes, foreign firms will gain market share, increase profits, invest more in R&D, shrink and possibly surpass our technological lead. These circumstances, in turn, potential could affect the quality of the technology available for national security purposes. Thus, industry argues it needs a streamlined export process, one that will not needlessly impede exports.

Critics of industry's national security position reject this argument. They maintain that the United States does not promote its national security by selling advanced technology to potentially hostile states. This technology, if sold to a regime of dubious stability, could be used against the United States or allies in the future. Proponents of this argument point to the case of Iraq, which received U.S. weaponry in the 1980s when Saddam Hussein was considered a useful counterweight to Iran. Subsequently, this technology was used against Kuwait and allied forces in the Persian Gulf War. Reliance on the civilian sector for R&D, they claim, is a policy decision brought about by declining defense budgets in the 1990s. Some further argue that R&D that advances defense capabilities should be funded within the Defense Department if it is necessary to maintain controls on technology to certain nations.

Computing Power.[49] Industry groups and some other observers have used the rapid rise in computing power as an illustration both of the uncontrollable nature of technology and the inability of the export control system to account for such innovation. According to one national security analyst, attempting to control computing power is not "feasible or effective." He maintains that the restraint of computer trade is self-defeating because it cedes markets and profits that could be used for R&D.[50]

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[48] Milhollin, Gary, prepared testimony before the Senate Governmental Affairs Committee, May 26, 2000, p. 6.

[49] See also CRS Report RL31175.

[50] Richard Perle, former Assistant Secretary of Defense for Security Policy in the Reagan Administration speaking at the Forum for Technology and Innovation, Mar. 23, 1999, [http://www.tech-forum.org/upcoming/transcripts/CompExportsTrans.htm].

Increasing computing speeds combined with networking advances have blurred the distinction between super-computers and commodity computers. Microprocessors that individually comply with export regulations can be linked together to create servers with MTOPS capabilities that breach export thresholds. If enough processors are linked together, they can create a parallel processing system with capabilities that approach those of a super-computer. The Defense Science Board noted that the ability to cluster commodity computers in order to multiply computing power erodes the ability to restrict access to high-performance computing, even if high-performance stand-alone machines can be controlled.[51]

Other observers believe the United States can restrict access to the highest computer technology by limiting exports. They maintain that American-made computers are perceived as superior, and thus carry greater cachet than products from other nations. They note that the purchase of an American-made computer product also buys superior networking and service, often at a better price. Control advocates maintain that these distinctions are significant, that qualitative differences are important.[52] In addition, networking a parallel processing system, as those without access to advanced computing technology must do to increase computing capability, presents additional challenges distinct from those faced by engineers of commodity computers.

Post-Shipment Verification. One policy that has been attempted to monitor and verify the end-use of controlled goods is the post-shipment verification requirement (PSV) on the export of HPCs mandated by Sec 1213 of NDAA98 (see above). This section requires that a PSV be made for computers destined for computers controlled to tier III destinations, including China, Russia, India, Pakistan, Israel and other nations in areas of regional instability.[53] Lawmakers have been especially concerned with exports of HPCs to the People's Republic of China. The GAO has reported that China has restricted access to facilities that contain U.S. HPC exports. It has also found that BIS has made limited efforts to monitor or to verify compliance with the terms and conditions specified by the export license.[54] Reportedly, the difficulty in monitoring the end-use of HPC exports in China has been exacerbated by the close ties that Chinese state owned enterprises have with the Chinese military.[55]

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[51] Defense Science Board, Final Report of Task Force on Globalization and Security, Washington: Office of the Under Secretary of Defense for Acquisition and Technology, Dec. 1999, p. 27.

[52] Milhollin, Gary, prepared testimony before the Senate Governmental Affairs Committee, May 26, 2000, p. 6.

[53] Originally this regulation applied to computers over 2,000 MTOPS. The benchmark was raised over the years to 190,000 MTOPS and has now been replaced by a new metric, weighted teraflops (WT)(see "High Performance Computers (HPCs)," above).

[54] GAO 02-468T - Export Controls: Issues to Consider in Authorizing a New Export Administration Act, Feb. 28, 2002, p. 7.

[55] CRS Report 98-617, *Technology, Trade and Security Issues Between the United States and the People's Republic of China: A Trip Report*, August 1997, by Glenn J. McLoughlin.

The Effectiveness of Multilateral Regimes. The United States participates in several multilateral export control regimes. The principal multilateral regime related to dual-use goods and technology is the Wassenaar Arrangement (WA) on Dual-Use Goods and Munitions. The WA was created in 1996 and is the successor organization to the Coordinated Committee (CoCom), the Cold War era dual-use control regime that ended in 1994. The WA dual-use control list is generally consistent with U.S. CCL items subject to national security controls. The United States also participates in four proliferation related control regimes: the Australia Group (chemical and biological weapons and precursors); the Missile Technology Control Regime, and the Nuclear Suppliers Group.[56]

Generally, these groups are characterized by national discretion, a common control list, and regular reporting requirements. Each group has formulated a common control list and member nations control the exports of those goods under their own national laws, a policy know as national discretion. Unlike CoCom, however, these organizations do not perform a review function prior to the grant of a national export license. The regime's members do pledge disclosure of export licensing decisions, and pledge consultation on sensitive export licenses. Some groups adhere to a "no undercut" provision — i.e., a member state will not license the sale of an item in which a license has been denied by another state. However, these groups operate by consensus and are hampered by limited institutional structures.

Some observers contend that the Wassenaar Arrangement, in particular, is ineffective because it relies on consensus of member states. The necessity for consensus, critics charge, results in a level of control acceptable to all. Its minimal reporting requirements mandate notification only that an item has been sold, thus preventing effective pre-export consultation among member states.

Industry representatives stress the necessity of effective multilateral controls. They argue that export controls are effective only if they are adhered to by all states capable of exporting a given technology. For example, the machine tool industry has been at the forefront in criticizing the unilateral nature of our export policies, especially concerning exports to China. It notes that there is no consensus among Wassenaar Arrangement countries on the proper limits of technology transfer to China. (Indeed, no country is explicitly targeted by Wassenaar.) Stringent domestic controls combined with minimal multilateral constraints only damage American companies, according to industry spokesmen. They fault the U.S. for having an overly rigorous licensing policy towards China, without noticeably pursuing a strategy to convince our allies to follow our lead.[57]

Proponents of tighter export restrictions note that America traditionally has taken the lead in export controls and non-proliferation efforts. These efforts included

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[56] See CRS Report RL31559, *Proliferation Control Regimes: Background and Status*, coordinated by Sharon A. Squassoni; and CRS Report RS20517, *Military Technology and Conventional Weapons Export Controls: The Wassenaar Arrangement*, by Richard F. Grimmett.

[57] See Freedenberg, p. 6.

the original EAA, adopted in 1949, and the establishment of CoCom. They argue that efforts to strengthen CoCom's successor regime, the Wassenaar Arrangement, cannot succeed if Washington itself is loosening export restrictions. Thus, the United States must take the lead in order to convince other nations to follow the U.S. example. Adherents of this viewpoint argue that the successful negotiating strategy in these multilateral fora is to adopt controls first and then persuade other countries to follow suit. Hence in their view, an export control strategy pegged solely on the policies of other nations, negotiated by consensus, is ineffectual and harmful to national security.[58]

Both industry spokesmen and advocates of heightened export controls agree that the multilateral controls need to be strengthened. Yet, to do this requires consensus on which goods and which countries represent a threat. There does seem to be agreement among western nations to restrict dual-use items to a limited number of 'countries of concern,'[59] yet consensus breaks down with regard to other states, notably China. The export control dilemma in this context becomes clear. Without consensus on a particular target country, the question becomes whether the United States should impose controls unilaterally. One then needs to determine either: which non-proliferation or other foreign policy goals are sufficiently important to offset possibly damaging American business, and possibly costing American jobs; or how large an economic benefit would justify risking important national security goals.

China. Debate over export controls has often focused on China. The dilemma that encapsulates U.S. export control policy to China is how to benefit from the potentially vast Chinese market and low Chinese production costs while minimizing the risk to U.S. security interests of exporting sensitive dual-use technologies to China. Some representatives of the business community have argued that U.S. export control policy toward China is too stringent. They claim such controls have hampered technology transfers to China in the past few years while the controls of U.S. allies have not. They reported that Chinese companies will not ask U.S. companies to bid on sales because of the delays associated with the U.S. licensing process. As one industry spokesman has testified: "The result has been that the Chinese are denied nothing in terms of high technology, but U.S. firms have lost out in a crucial market. This serves neither our commercial nor our strategic interests".[60]

However, other analysts and several Members of Congress have expressed grave concerns about China's dual-use technology acquisitions. They cite findings of the Cox Commission that China evaded existing export controls to illegally obtain missile design and satellite technology and that China has circumvented end-user controls on high-performance computers.[61] According to this view, the Commission's

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[58] Milhollin, prepared, p. 7.

[59] Cuba, Iran, Iraq, Libya, North Korea, and Sudan.

[60] Freedenberg, p. 7

[61] For more information on technology transfers to China, see CRS Report 98-485, *China: Possible Missile Technology Transfers from U.S. Satellite Export Policy — Actions and* (continued...)

findings show the need for both tightened controls and greater enforcement of export controls against China. In addition, China has been implicated in several nuclear, missile, and chemical proliferation activities.[62] In 2005, BIS approved 1,303 licenses to China, which represented potential sales of $2.4 billion, or approximately 6% of the total value of U.S. exports to China during FY2005 ($39.0 billion).[63]

The Licensing Process and Organization of the Export Control System. As noted earlier, the Bureau of Industry and Security (BIS) within the Department of Commerce (DOC) is responsible for regulating dual-use exports. However, other agencies also provide input into the licensing process. BIS consults with other members of the national security community on license applications and commodity classifications. The Defense Threat Reduction Agency in the Department of Defense conducts national security reviews for license applications referred from Commerce and State. The Department of Energy also reviews dual-use license applications referred by BIS for nuclear uses and nuclear end-users, and it and the Nuclear Regulatory Commission license exportation of nuclear materials. In addition, the Office of Defense Trade Controls (ODTC) at the State Department administers the International Traffic in Arms Regulations. Through the U.S. Munitions List, ODTC controls the export of weapons and military technology.

Industry leaders identify several problems with the existing licensing system. First, overlapping jurisdiction between the Commerce and State Departments with regard to certain dual-use products makes it unclear where the exporters need to apply for licenses. Second, extended time periods required for license approval compromise the reliability of U.S. suppliers and make it hard for manufacturers and customers to plan ahead. Third, the licensing system does not reflect advances in technology, foreign availability of dual-use items, and the economic impact of export controls on the industrial base. Finally, there is no opportunity for judicial review of licensing decisions.

Others consider foreign availability and economic impact to be important considerations, yet secondary to national security. Export administration officials claim that they conduct thorough, fair, and expeditious license reviews. Time is required to check proposed export items against lists of controlled items, check end users and end uses against lists of suspect recipients, and coordinate with several government agencies. Officials say they must be able to "stop the clock" to obtain additional information and investigate certain issues on a case-by- case basis to insure that sensitive technologies do not find their way into the wrong hands.

Some analysts who see national security as the primary purpose of the export control regime question whether BIS belongs in the Department of Commerce. They claim that DOC's mission is mostly one of promoting exports and generally serving commercial interests. This, in some eyes, may create an institutional bias towards

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[61] (...continued)
Chronology, by Shirley A. Kan.

[62] Ibid.

[63] BIS, FY2005 *Annual Report*, Appendix F.

the granting of export licenses and skew the process against national security goals. Other analysts point to the full and equal participation of other agencies, particularly the Department of Defense, in the current structure to argue that such bias is unlikely to prevail.