THE IMPACT OF THE CLINTON ADMINISTRATION'S EXPORT PROMOTION PLAN ON U.S. EXPORTS OF COMPUTERS AND HIGH-TECHNOLOGY EQUIPMENT

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1. INTRODUCTION

On September 28, 1993, the Institute for International Economics released a study evaluating domestic disincentives to U.S. trade. According to that study, then-current domestic restrictions on U.S. trade cost the nation between $25 billion and $40 billion each year. The Institute's study directly attributed two-thirds to three-fourths of the estimated export "shortfall" to domestic export controls. Just prior to this study's release, U.S. Export-Import Bank Chairman Kenneth D. Brody noted that the United States lost $10 to $15 billion annually due to unnecessary export controls. Although Brody's figures are lower than the Institute's, both estimates reveal that U.S. businesses are suffering substantial losses. The export shortfall becomes even more significant when one considers that each $1 billion in exports supports approximately 19,100 U.S. jobs.

Domestic controls on exports of high-technology equipment particularly have been restrictive. Prior to September 1993, computers, telecommunications equipment, and electronics accounted for eighty percent of export control license

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1 See U.S. Export Controls, Other 'Disincentives' Cost Firms $40 Billion a Year, Study Says, 10 Intl' Trade Rep. (BNA) No. 38, 1608, 1608 (Sept. 29, 1993).

2 Id.

3 The study attributes the remainder of the shortfall to insufficient export financing, foreign policy trade sanctions, and costs resulting from product-liability regulations in certain important trade sectors. Id.


5 See U.S. Exports To Mexico Grew Sharply Between 1987 and 1992, Data Show, 10 Intl' Trade Rep. (BNA) No. 38, 1616, 1616 (Sept. 29, 1993). Whether this correlation would continue to hold if higher export levels were actually attained is speculative.
applications.\textsuperscript{6}\linebreak Strict control of high-technology exports has become quite burdensome in light of the recent emergence of vast new markets for this type of technology.\textsuperscript{7} For example, Robert E. Allen, Chairman of American Telephone & Telegraph Co. ("AT&T"), testifying before the House Foreign Affairs Subcommittee on Economic Policy, Trade, and Environment, estimated that then-current restrictions on high-technology exports, if continued, would jeopardize approximately $500 million in potential AT&T sales over the next five years to countries such as Russia and the People's Republic of China.\textsuperscript{8} With the end of the Cold War, the fall of communism in Eastern Europe and the former Soviet Union, and the resulting new world economy, such severely restrictive controls on high-technology exports have become outdated.

On September 29, 1993, the Clinton administration unveiled a long-term export promotion plan.\textsuperscript{9} Ronald H. Brown, Secretary of the Department of Commerce, in his capacity as Chairman of the nineteen-agency Trade Promotion Coordinating Committee ("TPCC"), supervised the drafting of the plan. He has referred to it as the embodiment of a "sea change" in U.S. export promotion and policy.\textsuperscript{10} Indeed, if government estimates are correct, the actual and proposed changes in the plan would remove export license requirements from over $30 billion worth of computers and high-technology equipment.\textsuperscript{11} Additionally, these changes could raise overall U.S. exports from the current annual total of approximately $700 billion to a total of $1 trillion annually by the end of the

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\item \textsuperscript{6} See Special Report: Clinton Unveils TPCC Export Plan Addressing Controls and Financing, 10 Int'l Trade Rep. (BNA) No. 38, 1645, 1645 (Sept. 29, 1993) [hereinafter TPCC Plan]. This statistic indicates the extent to which high-technology goods have been subject to export control. The export licenses required in this area were necessary due either to the nature of the goods or technology involved, or to the export status of the country to which the goods were to be shipped. \textit{See id.} at 1658 (reproducing excerpts from the Clinton administration's report \textit{Toward a National Export Strategy}).
\item \textsuperscript{7} See Eagleburger Says Allied Pressure Will Force End To COCOM Relatively Soon, 10 Int'l Trade Rep. (BNA) No. 38, 1609, 1609 (Sept. 29, 1993).
\item \textsuperscript{8} See \textit{id.} at 1610.
\item \textsuperscript{9} See \textit{TPCC Plan, supra} note 6, at 1645.
\item \textsuperscript{10} See \textit{id.} at 1645.
\item \textsuperscript{11} See \textit{id.} at 1646.
\end{itemize}
This Comment analyzes U.S. export regulations both generally and specifically with regard to computers and high-technology equipment specifically. This Comment then reviews the Clinton administration's proposed export promotion plan and concludes that, with some slight modifications, the plan will achieve its objective of increasing U.S. exports of computers and high-technology equipment. Section 2 of this Comment reviews the nature of the federal government's control of U.S. exports and outlines the complex export regulation system of the Department of Commerce. Section 3 analyzes the detrimental effects of overly-restrictive U.S. export controls. Section 4 discusses the Clinton administration's proposed export promotion plan, with specific reference to its effect on exports of computers and high-technology equipment.


Recently, Secretary Brown appeared before the House Foreign Affairs Subcommittee on Economic Policy, Trade, and Environment to present the Second Annual Report of the TPCC. In his prepared statement, the Secretary emphasized the growth in U.S. sales abroad over the past year and made reference to expanding economic growth in the industrialized nations, the beneficial effects of the North American Free Trade Agreement, and increased exports to East Asia and South America before concluding that the United States "can look forward to a stronger export performance for 1995 and beyond . . . ." Prepared Statement By Ronald Brown, Secretary Of Commerce, Before The Senate Committee On Banking, Fed. News Service, Oct. 5, 1994, available in LEXIS, News Library, Fednew File [hereinafter Prepared Statement by Ronald Brown]. The Secretary then stated his belief that the Clinton administration "can raise [its] objective from $1 trillion in U.S. exports by the year 2000 to an even more ambitious objective of $1.2 trillion in U.S. exports by the year 2000." Id. (citation omitted). At roughly 20,000 jobs for each $1 billion in exports, such an increase from the current export level would translate into 10 million new U.S. jobs.

13 See TPCC Plan, supra note 6, at 1645-46.
2. FEDERAL REGULATION OF U.S. EXPORTS

2.1. The Broad Federal Control of Exports

Congress exercises its power to regulate commerce in part through comprehensive control of U.S. exports. The United States subjects all commodities and technology exported from the country to some degree of government regulation. As a result of its plenary authority to regulate trade, Congress has authorized government entities such as the Department of State, the Department of Energy, and the Drug Enforcement Administration to monitor and regulate the flow of certain goods and technology from the United States. The aforementioned agencies, however, oversee only a small percentage of total U.S. exports, namely, specialty areas of particular strategic significance such as weapons technology and radioactive materials. The vast majority of all goods and technology exported from the United States, including computers and high-technology equipment, are subject instead to the regulatory power of the Department of Commerce ("Commerce Department" or "the Department"). The Export Administration Act of 1979 ("the Act"), as amended, gives

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14 The U.S. Constitution grants to Congress the power "[t]o regulate commerce with foreign nations . . . ." U.S. CONST. art. I, § 8.
15 See, e.g., 15 C.F.R. § 770.3(a) (1993) (prohibiting exports of all commodities and technical data subject to the Commerce Department's control "unless and until" proper Department licenses are established or granted).
16 The Department of State oversees the export of all military commodities and technology under the authority of the Arms Export Control Act, 22 U.S.C. §§ 2751 et seq. (1988), as implemented by the International Traffic in Arms Regulations. 22 C.F.R. §§ 120.7-130.17 (1993).
the Department authority over the export of all commodities and technology not subject to the regulatory schemes of other government agencies or Departments. In the event of jurisdictional ambiguities, line-drawing rules exist to assist in the identification of the controlling agency.

2.2. The Regulatory System of the Department of Commerce

The Act is implemented through the Export Administration Regulations ("Regulations"), a complex set of definitions, guidelines, and licensing requirements and restrictions occupying over four hundred pages of Title 15 of the Code of Federal Regulations ("C.F.R.").

2.2.1. Definitions

The C.F.R. defines a "commodity" as "[a]ny article, material, or supply except technical data." "Technology" is defined generally as "[s]pecific information necessary for the 'development,' 'production,' or 'use' of a product." Technology can take two forms: (1) technical data, such as blueprints, manuals or formulae; and (2) technical assistance,
such as consulting, repair, or skills training. Technical data, however, often is used as a blanket term indicating technical data proper, technical assistance, and software. Furthermore, models and prototypes are considered to be both commodities and technology and are controlled as such—in any specific case the more restrictive requirements apply.

The C.F.R. defines “export” quite broadly. The C.F.R. recognizes three general types of exports: (1) actual shipment of goods or conveyance of technical information out of the United States, (2) “release of technical data,” and (3) “reexport” of goods and technology.

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25 See id.

26 This understanding of the term “technical data” is explicitly endorsed in 15 C.F.R. § 779.1 (1993). That section indicates, however, that this interpretation of the term “will be changed in the future” to reflect the specific definitions found in 15 C.F.R. § 799.1, Supp. 3, where “technology” is the blanket term denoting technical data and technical assistance.

27 See 15 C.F.R. § 770.2 (1993) (stating that a commodity is “[a]ny article, material or supply”); 15 C.F.R. § 799.1, Supp. 3 (noting that technical data may take the form of “models”); see also Susan Haberman Griffen, Exporting Biotechnology: The Pitfalls, 16 AM. INTELL. PROP. L. ASS’N Q.J. 542, 547 (1988-89) (noting that the Regulations consider “models” to be a hybrid class of commodities/technical data).

28 See Griffen, supra note 27, at 547.

29 15 C.F.R. § 779.1(b) (1993). While the shipment or transmission of goods or technical data out of the United States is easily seen as an export, the concept of release is not so transparent. In essence, technical data is released visually, orally, or via a writing. Id. A release within the United States is considered an export if the transmission occurs with the “knowledge or intent” that the information transmitted will be conveyed beyond U.S. borders. See Griffen, supra note 27, at 547. Any release of U.S.-origin technical data abroad is also considered an export of U.S. technology. 15 C.F.R. §§ 779.1(b)(1)(iii), (2)(ii). Scientific collaborations between U.S. and foreign scientists involving the exchange of information or prototypes therefore can result in exports of U.S. technology, regardless of the location of the collaboration. The presentation of U.S.-origin technical data during a foreign conference also could amount to an export. As noted above, visual inspection by foreigners of U.S. equipment also can constitute an export. Id. § 779.1(b)(2)(i). Additionally, the use of technical expertise acquired in the United States, as in foreign repair work, for example, also can amount to an export under the C.F.R. definition. Id. § 779.1(b)(2)(iii).

30 15 C.F.R. § 779.1(c) (1993); see also 15 C.F.R. § 770.2 (defining “reexport”). Reexport involves the actual shipment of U.S.-origin goods or data from one foreign country to another. Id. §§ 770.2, 779.1(c). In general,
2.2.2. Policy and Scope of the Regulations

Both the Act\textsuperscript{31} and the C.F.R.\textsuperscript{32} express the goals underlying the use of export controls. The C.F.R. provides:

Export controls \ldots are used to the extent necessary:

(1) To protect the domestic economy from the excessive drain of scarce materials \ldots;

(2) To further significantly the foreign policy of the United States \ldots; and

(3) To exercise the necessary vigilance over exports from the standpoint of their significance to the national security of the United States.\textsuperscript{33}

Accordingly, the Act and the C.F.R. address three basic forms of export control: (1) short supply controls;\textsuperscript{34} (2) foreign policy controls;\textsuperscript{35} and (3) national security controls.\textsuperscript{36} The requirements and restrictions referred to collectively as short supply controls implement the policy concerns of section 770.1(a)(1) of the Regulations. As the name suggests, this type of export control curtails the flow of certain goods out of the United States in order to prevent their domestic scarcity. Natural resources make up the majority of commodities regulated for short supply reasons.\textsuperscript{37} Short supply controls, however, form a relatively small percentage of the overall 

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  \item the reexport of commodities is prohibited unless the commodity in question could have been exported initially from the United States to the reexport destination. \textit{Id.} § 774.1-2. For technical data, the regulations governing reexport parallel those governing releases. Thus, any release of U.S.-origin technical information in a foreign country with the knowledge or intent that the information will be passed on to another foreign country constitutes reexport. \textit{Id.} § 779.1(c). Visual inspection of U.S. facilities or equipment abroad can also amount to reexport, as can the use of personal knowledge gained in the United States. \textit{Id.} § 779.1(1), (3).

\item \textit{Id.} § 2402 (1988).

\item \textit{Id.} § 2406 (1988).

\item \textit{Id.} § 2404.

\item 50 U.S.C. app. § 2405.

\item 15 C.F.R. § 770.1(a) (1993).

\item 15 U.S.C. § 2405.

\item 15 U.S.C. §§ 777.6, 777 (Supp. 2), and 777.7 (Supp. 4) (1993).
\end{itemize}
Most regulated exports involve manufactured goods, such as computers, telecommunications equipment, and related technology, which are much more likely to be controlled for foreign policy or national security reasons.

From a practical standpoint, foreign policy controls are often indistinguishable from national security controls, although their goals are somewhat different. Foreign policy controls prohibit or curtail the flow of goods and technology from the United States for international political reasons, such as maintenance of an embargo. National security controls, on the other hand, restrict trade in any materials, equipment, or technology that would enhance the military power of a foreign nation to the detriment of U.S. security. Both of these controls are applied broadly, leading to the classification of many types of commodities or technology as "dual use" items that have both commercial and military applications. This is important for the exporter of computers and telecommunications equipment because many types of computers, electronics, and software are considered "dual-use" items. Despite the fact that these items are not weapons per se, they nevertheless may be subject to national security controls.

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38 See Smith, supra note 21, at 116.
39 Id. at 116-17 (noting that national security controls and foreign policy controls apply to computers and other electronic equipment); see generally 15 C.F.R. § 799 (setting out the Commerce Control List ("CCL"), an examination of which reveals the vast number of goods and information that are subject to Commerce Department export control, many for national security or foreign policy reasons).
40 See 50 U.S.C. app. §§ 2402(2)(B), 2405(a)(1); see also Smith, supra note 19, at 117 (identifying goods subject to foreign policy controls).
42 See Smith, supra note 21, at 116.
43 See TPCC Plan, supra note 6, at 1658. These items are subject to national security controls, or foreign policy controls, or both. For example, seals and gaskets made from fluorinated compounds and designed for aircraft or aerospace use are subject to controls for reasons of national security. See 15 C.F.R. § 799.1 Supp. 1 (1993), ECCN 1A01A. Additionally, some "composite structures or laminates" are subject to similar controls due to their potential use in missile systems. See id. ECCN 1A02A. For an explanation of the ECCN system, see infra notes 51-54 and accompanying text.
44 See, e.g., 15 C.F.R. § 799.1, Supp. 1, ECCN 4A01A (1993) (regulating
2.2.3. Licensing

The Commerce Department supervises the export of all goods and technology under its control through the use and enforcement of a comprehensive licensing system. With certain exceptions, the Department prohibits all exports subject to its regulation unless the exporter obtains the proper license or authorization from the Department's Office of Export Licensing. Exceptions to this licensing requirement include all exports to Canada for use in Canada (unless otherwise indicated), and certain exports for official consumption by the U.S. Armed Forces.

To facilitate and standardize license processing, the Commerce Department utilizes a licensing system that considers the proposed export's destination and catalogues each item sought to be exported based on its general nature, its characteristics, or its capabilities. This system is organized around Country Groups and the Commerce Control List ("CCL"), which categorizes all commodities and technologies subject to the Department's export controls. This categorization system permits exports to certain countries and denies them to others.

The CCL system produces a specific five-character Export Control Classification Number ("ECCN") for each item, group of related items, or type of technology included in the CCL. Each ECCN entry indicates the products or technologies it covers, the functions, characteristics, or specifications of those

"[e]lectronic computers and related equipment"); id. ECCN 4A03A (regulating "[d]igital computers", 'assemblies', and related equipment"); id. ECCN 4D01A (regulating certain types of software); id. ECCN 5A02A (regulating "[t]elecommunication transmission equipment' . . . having any of [certain listed] characteristics, functions, or features").

45 Id. §§ 770.3(a), 772.1(b).
46 Id. § 770.3(a)(1).
47 Id. § 770.3(a)(2).
48 Id. § 770, Supp. 1. All foreign countries are separated, based on foreign policy and national security concerns, into seven Country Groups, lettered Q, S, T, V, W, Y, and Z. Id.
49 Id. § 799.1, Supp. 1. See also Smith, supra note 21, at 121-22 (reviewing the CCL).
50 For a more detailed description of the structure of the CCL and a listing of the Country Groups, see infra Appendix I.
items, and the export licensing requirements involved. Each ECCN is associated with a specific commodity or type of technology and does not change unless the commodity or technology changes, or the Department specifically changes it. The Regulations provide further descriptions of commodities falling within each ECCN to assist exporters in matching their products with the correct ECCNs, a necessary first step in the license application process.

2.2.4. General and Validated Licenses

With certain specific exceptions, "the export from the United States of all commodities, and all technical data . . . is . . . prohibited unless and until a general license authorizing such export shall have been established or a validated license or other authorization for such export shall have been granted . . . ." General licenses, created by the Department, exist as standing licenses; the export of goods or technology covered by a general license requires neither an application by the exporter nor a document from the Department. If the goods or information sought to be exported qualify for one of the

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52 See id. § 799.1, Supp. 1. For example, “[c]omputers for fingerprint equipment” are listed under ECCN 4A80C. Id. The first digit of the ECCN indicates the general category of the CCL into which the commodity falls, in this case category 4 (computers). The second character of the ECCN, “A” in this example, identifies the good as some type of equipment, component, or assembly. Next, the “80” indicates that computers falling within this ECCN are subject to other licensing controls. An examination of the listing itself shows that exports of these computers are restricted for foreign policy reasons. Id. Finally, the “C” indicates that the export of these computers to any nation other than Canada, Australia, Japan, New Zealand, and members of NATO is prohibited unless the proper license is granted by the Commerce Department. Id.; see also § 799.1(b)(4) (explaining the possible denotations of the fifth letter of the ECCN).

This example is offered for illustrative purposes only. The dissolution of the Coordinating Committee on Multilateral Export Controls (“COCOM”) and the establishment of a successor organization may alter the actual requirements for the exports of computers listed under ECCN 4A80C. See section 4.1, infra, for a discussion of the traditional mission of COCOM and section 4.3, infra, for a discussion of the dismantling of COCOM.

53 See Smith, supra note 21, at 122.

54 Exporters can refer to the “Commodity Interpretations” material found at 15 C.F.R. § 799.2, Supp. 1 (1993) for assistance in determining the exact scope of any particular ECCN.

55 Id. § 770.3(a).
approximately twenty different types of general licenses, the exporter need only identify on its shipping documents which license authorizes the export.

Exporters should, however, be aware of the possibility that a proposed export, while valid under a general license, may be prohibited by a "special restriction" of the Regulations. A special restriction prohibits the export of specific goods and technology to certain country destinations or to individual purchasers who have violated U.S. export laws. It is the exporter's duty to determine whether the proposed export is prohibited by a special restriction.

Validated licenses authorize the export of goods and information not covered by any of the general licenses. The

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56 Of the general licenses available, general license G-DEST is broadest in scope. It authorizes the export, to any destination, of any commodity on the CCL for which a validated license is not required. Id. § 771.3(a).

General license G-TEMP authorizes the export of certain commodities or software for temporary use overseas. Id. § 771.22(a). The exported material must be returned to the country of export as soon as it has served its purpose but, with only limited exceptions, no later than one year after export. Id.

Two general licenses exist for the export of specific types of technical data: general licenses GTDA and GTDR. Id. § 779.2. General license GTDA authorizes the unrestricted export of "publicly available" information. Id. § 779.3(a)(1). Information is publicly available "when it becomes generally accessible to the interested public," through media distribution, publication, open discussion at conferences or seminars, etc. Id. § 779.3(b). Restricted information not available to the world at large does not qualify for general license GTDA, but it may be exported under general license GTDR subject to certain restrictions set forth in the Regulations. Id. § 779.4.

57 Id. § 771.2(b).

58 See, e.g., id. § 785 (enumerating the special country restrictions); id. § 788, Supp. 1. (listing persons prohibited from participating in U.S. export transactions). This listing, as well as the Regulations in general, are updated via the Federal Register. See id. § 788(a)(2), Supp. 1; Smith, supra note 21, at 117 n.27.

59 See 15 C.F.R. § 771.2(c).

60 There are four basic types of validated licenses. An "Individual License" authorizes the export of technical data or a specified amount of goods on a specific date to an identified foreign buyer. Id. § 772.2(b)(1). A "Project License" allows the export, for approximately one year, of all goods and technology required for the completion of a specific activity, such as a construction project. Id. § 772.2(b)(2); Smith, supra note 21, at 119. "Distribution Licenses" authorize exports of various commodities to approved foreign distributors or users for a period of one year, or, in specific instances, two years. 15 C.F.R. § 772.2(b)(3) (1993). Finally, "Service
exporter must apply for a validated license and the proposed export cannot occur unless the license is issued by the Commerce Department's Office of Export Licensing. If the license is not granted, the exporter may appeal the Department's decision to the Assistant Secretary of Commerce for Export Administration.

The application and review process is considered necessary because goods and technology requiring validated licenses often raise significant foreign policy or national security concerns. Indeed, the sensitive nature of the material itself requires that such exports have validated licenses in the first place. Not surprisingly, these licenses are very limited in scope. They usually authorize only the shipment of specific goods or information to a named foreign purchaser for a limited period of time. Moreover, they may not be transferred or reused, even for an identical transaction.

## 2.2.5. Enforcement and Penalties

The U.S. Customs Service enforces the Department's licensing system. Noncompliance with the Regulations subjects the exporter to criminal punishment, civil

Supply Licenses allow U.S. exporters to ship spare or replacement parts to certain Country Groups in order to service equipment previously made or exported by the licensee. Id. § 772.2(b)(6).

1. See Smith, supra note 21, at 121-22.

2. See 50 U.S.C. app. § 2411(a) (1988); Griffen, supra note 27, at 543-44. Note that the U.S. Customs Service is an agency within the Department of the Treasury, not the Department of Commerce.

3. Anyone who "knowingly violates or conspires to or attempts to violate" any section of the Act or the Regulations can be fined up to five times the value of the exports involved or $50,000, whichever is greater, or jailed for up to five years, or both. See 50 U.S.C. app. § 2410(a) (1988); 15 C.F.R. § 787.1(a)(1)(i) (1993). Except in the case of individuals, an entity that willfully violates the Act or the Regulations, with the knowledge that the exports in question are bound for, or will benefit, a controlled country, can be fined $1,000,000 or five times the value of the goods or technology involved. See 50 U.S.C. app. § 2410(b)(1)(A) (1988); 15 C.F.R. § 787.1(a)(1)(ii)(A) (1993). Individuals who intentionally violate the Act may be fined up to $250,000 or imprisoned for up to ten years, or both. See 50 U.S.C. § 2410(b)(1)(B); 15 C.F.R. § 787.1(a)(1)(ii)(A) (1993). Further, anyone convicted of knowingly or willfully violating a provision of the Act or the

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penalties, and administrative sanctions. Before any civil penalties may be imposed, however, the Department must issue a formal complaint. The charged party also may request a hearing before an administrative law judge.

Regulations regarding goods or technology subject to national security controls must forfeit to the states the commodities or data in question, any property used in the unlawful export or attempt to export, and any cash or personal property derived, directly or indirectly, from the violation. See 50 U.S.C. app. § 2410(g)(1)(A)-(C) (1988) (Section 2410(g)(2) provides that forfeitures under § 2410(g)(1) are subject to the due process protections of 18 U.S.C. § 1963 (1988)); 15 C.F.R. § 787.1(b)(4) (1993).

The Secretary of Commerce can impose civil penalties of up to $10,000 for each violation of the Act or the Regulations. See 50 U.S.C. app. § 2410(c)(1) (1988); 15 C.F.R. § 787.1(b)(3) (1993). In the case of violations involving national security controls, fines of up to $100,000 may be levied. See 50 U.S.C. app. § 2410(c)(1) (1988); 15 C.F.R. § 787.1(b)(3) (1993). It should be noted that these penalties may be imposed in addition to or in place of any other types of penalties imposed. See 50 U.S.C. app. § 2410(c)(1) (1988); 15 C.F.R. § 787.1(b)(3) (1993).

Perhaps the most devastating administrative sanction is the "denial order." At the Secretary's discretion, no individual or entity convicted of violating the Act, the Regulations, or any license or order issued under the Act, may apply for or use any export license under the Act for up to 10 years following the date of conviction. See 50 U.S.C. app. § 2410(h)(1); see also 15 C.F.R. § 787.1(b)(1) (1993) (discussing the denial order, but omitting discussion of time limit after conviction). Denial orders and other administrative sanctions may be issued only after notice and opportunity for hearing. 50 U.S.C. app. § 2410(c)(2)(B).

Temporary denial orders, however, may be issued without a hearing if the Department determines that it is necessary to prevent an "imminent violation" of the Act, the Regulations, or any order or license issued under the Act. 50 U.S.C. app. § 2412(d)(1); 15 C.F.R. § 788.19(a)(1), (b)(1) (1993). These orders are effective for a maximum of 180 days but can be renewed if necessary to prevent an imminent violation. 50 U.S.C. app. § 2412(d)(1). Renewals must be in writing and can only issue after notice and an opportunity for hearing. Id.; 15 C.F.R. § 788.19(d)(1)-(2) (1993). Moreover, the initial issuance of a temporary denial order and any renewal of a temporary order can be appealed by the person or persons subject to the order. 50 U.S.C. § 2412(d)(2); 15 C.F.R. § 788.19(e) (1993).

After the hearing, the administrative law judge must forward a written decision to the Secretary of Commerce, who must affirm, vacate, or modify the decision within 30 days of receiving it. Id. The charged party may then appeal the Secretary's decision, within 15 days of its issuance, to the U.S. Court of Appeals for the District of Columbia Circuit. Id. § 2412(c)(1), (3).
3. THE EFFECTS OF SELF-IMPOSED HINDRANCES
ON U.S. EXPORTS

Self-imposed restrictions on U.S. export practices in general, and on the export of high-technology equipment in particular, are detrimental to U.S. businesses. For many years, the Department has implemented unilateral export controls in the name of national security or foreign policy without adequately considering the costs involved. The economic costs of such overly-protective regulatory activity fall primarily on U.S. businesses. Businesses incur costs in the form of lost sales (and lost profits from future sales) caused by the decrease in foreign market shares due to the perceived inability of U.S. firms to deliver commodities consistently.

For example, on August 24, 1993, the United States imposed sanctions on China and Pakistan in response to a determination by the U.S. intelligence community that China had shipped certain missile components to Pakistan in October 1992. The sanctions prohibited any new sales of satellites, satellite technology, and related equipment, such as rocket components and flight control systems, for two years from the date that sanctions were imposed. Lynn E. Davis, Undersecretary of State for International Security Affairs, stated that the primary effect of the sanctions would be to prevent use of Chinese rockets to launch U.S.-made satellites. Davis also noted that the sanctions would affect an estimated $400 to $500 million in U.S. sales to China each year.

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71 See id. at 446 & n.157.
74 See id. at 1445; Kempster & Tempest, supra note 72, at A8.
75 U.S. Bars Sales of Advanced Technology, supra note 73, at 1444-45.
The United States, however, is not the only nation capable of manufacturing satellites. Less than three months after the sanctions took effect, German and Chinese negotiators signed a memorandum of understanding indicating China's intent to purchase up to twenty German-made satellites. For one U.S. company in the satellite technology business, Hughes Electronics, the Sino-German agreement represents a potential $2 billion in lost sales.

The U.S. government also has borne the economic costs of its own over-regulation. For instance, the government pays a substantial amount of money to implement and monitor an increasing number of complex export controls. Perhaps more strikingly, unilateral regulatory action by the government has at times necessitated the passing of special compensatory legislation designed to offset the impact of stringent export controls on the private sector. Although it is not related to the trade in computers or high-technology equipment, the Carter Administration's grain embargo against the Soviet Union in the wake of the Soviet invasion of Afghanistan on December 26, 1979 is an example of this phenomenon. The embargo blocked grain sales to the Soviets by U.S. farmers from January 4, 1980 through April 24, 1981, when President Reagan terminated it. During this period, the embargo disallowed the export of approximately 13 million metric tons of corn and 4 million metric tons of wheat. The embargo also prevented the prospective sales of 1.3 million metric tons of soybean meal

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77 See Beck, supra note 76, at 14. For example, Hughes lost a $100 million order by China for two telecommunications satellites. China contracted with a German company to fill this order. Id. (summarizing statements of Michael Armstrong, chief executive of Hughes Electronics).

78 See Overly, supra note 70, at 446 & n.157.
79 Id. at 446 & n.159.
80 Id. at 451.
81 Id. at 451, 454.
82 Id. at 455 n.201 (citing Export Administration Act ("EAA") 1980 Annual Report, OFFICE OF EXPORT ADMIN., DEPT. OF COMMERCE, EXPORT ADMIN. ANN. REP. FY 1980, at 146 (1981)).
and 65 thousand tons of poultry, which were being negotiated when the embargo was established. In response to the hardship it caused U.S. farmers, the government established compensatory grain programs costing more than $2.5 billion. Ultimately, the embargo cost the United States "approximately $11.4 billion in national output . . . and $3.1 billion in personal income." The embargo itself placed no significant burden on the Soviets, who were able to purchase the grain they required from three U.S. allies—Canada, Australia, and Argentina—each of which increased its production and market share as a result. Although high-technology products, and not agricultural goods, are the focus of this Comment, the above example illustrates the hidden costs that may be generated by unilateral export restrictions.

The U.S. government also bears certain non-economic costs resulting from restrictive unilateral export controls. These costs include strained relations between the United States and countries denied access to desired goods due to U.S. export policies and the resentment and frustration of U.S.


Ambassador Flecha de Lima urges the United States to "take into account the track record of the countries involved. [Brazil has] not been at war for over 130 years, and [borders] 10 countries with whom [it has] good relations." Id. at 12. Brazil's complaints, however, may soon be addressed. The United States recently named Brazil, along with nine other "emerging markets," as a primary target of future U.S. export promotion efforts. See
businesses that can only sit by idly while foreign competitors not burdened by such export restraints expand and take over potentially lucrative new markets. In cases where the goods in question are easily available from foreign sources, overly-restrictive unilateral export controls clearly are self-defeating. Instead, such controls generally transfer jobs and potential economic growth from the United States to other nations.

4. EXPORTING: NEW REGULATIONS

In September 1993, the Clinton Administration unveiled its new export plan. Notably, this plan, along with certain measures designed to facilitate exporting in general, relaxes the restrictions governing the export of computers and telecommunications equipment. Essentially, more powerful computers now are more easily exported to more destinations than the Regulations previously allowed. In terms of export procedures, more computers and telecommunications equipment are now covered by some type of general license, which greatly simplifies the export of such goods.

4.1. Previous Export Requirements: COCOM

Historically, one of the objectives of U.S. export policy was to deny Communist nations access to Western technology...
having direct military use.94 In particular, the United States sought to restrict Communist access to "dual-use" products. As noted above, "dual-use" items, including goods and information, are those which have primarily commercial applications, but also possess characteristics or capabilities that could enhance a nation's military potential.95 Not surprisingly, U.S. allies shared these export control objectives. Thus, in 1949, the United States and several of its allies formed the Coordinating Committee on Multilateral Export Controls ("COCOM").96 COCOM was "[a] multilateral organization that cooperate[d] in restricting strategic exports to controlled countries."97 The purpose of COCOM was to establish and maintain a system of export controls designed to curtail or eliminate the availability of strategic technology to nations deemed potentially hostile. At the time of its dissolution, COCOM consisted of seventeen member nations.98 These nations worked together to compile a list of goods and technologies considered to be either militarily sensitive or to have dual-use capabilities. Each member nation then incorporated this list of controlled commodities and information, which included many types of computers and telecommunications equipment, into its respective export control regime, thereby ensuring consistent export treatment of strategic goods by Western allies.99

95 See Excerpts, supra note 93, at 1658. For further discussion of "dual-use" items, see supra section 2.2.2.
98 Those members were: Australia, Belgium, Canada, Denmark, France, the Federal Republic of Germany, Greece, Italy, Japan, Luxembourg, the Netherlands, Norway, Portugal, Spain, Turkey, the United Kingdom, and the United States. See 15 C.F.R. § 770.2 (1993). COCOM was dissolved primarily due to the more favorable political and economic relations between the United States and its allies and the former Soviet Union, Eastern Europe, and China. See Eagleburger Says Allied Pressure Will Force End to COCOM Relatively Soon, supra note 7, at 1610.
4.2. Previous Export Requirements: CTP and Mtops

In the Commerce Department's export scheme, the performance level, or computational ability, of a computer is expressed in terms of its "composite theoretical performance" ("CTP"). An individual computer's CTP, measured in "millions of theoretical operations per second" ("Mtops"), is calculated according to a formula set forth in the CCL.100

Computers make up category 4 of the CCL.101 Previously, the Department required a validated license to export any digital computer with a CTP greater than 12.5 Mtops.102 General license authorization made it possible, however, to export computers having a CTP of 195 Mtops or less to any COCOM member nation and to Austria, Finland, Ireland, Sweden, and Switzerland, without obtaining a validated license.103 Likewise, computers with a CTP of 20 Mtops or less could be exported under a general license to most Country Group T and V nations.104 Computer shipments to Japan were virtually unrestricted because general license authority allowed such exports regardless of computer performance level.105 Generally, however, computers with a CTP exceeding 12.5 Mtops could not be exported without a validated license. Correspondingly, computers with a CTP of 12.5 Mtops or less could be exported, under general license G-DEST, to any destination other than Iran and Syria, the embargoed nations of Country Groups S and T, and South African military and police groups.106

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100 Appendix II of this Comment provides a representative list of computers and corresponding CTP levels.
102 See id. § 799.1(b)(1); TPCC Plan, supra note 6, at 1645.
103 See 15 C.F.R. § 771.25(b), Supp. 1, ECCN 4A03A (1993) (discussing general license GCT); McKenzie, supra note 94, at 8.
4.3. New Export Requirements

In the months following the announcement of the new export plan, the Commerce Department dramatically altered the export control landscape. As of October 1994, the Department had lifted controls on virtually all telecommunications equipment and on computers with a performance capacity of up to 1,000 Mtops, allowing the export of these goods and technology to all civilian end-users and for all end-uses in almost any nation in the world, with the exception of "terrorist-supporting" countries.

Moreover, as agreed upon during a meeting of the United States and its COCOM allies in November 1993, COCOM

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107 These new requirements were enacted on an incremental basis. On December 9, 1993, national security-based validated licensing requirements were eliminated for exports to virtually all destinations of computers with a CTP not exceeding 67 Mtops. 58 Fed. Reg. 64,674 (1993) (to be codified at 15 C.F.R. pts. 771, 799). These requirements also were eliminated on computers functioning under 195 Mtops for exports to nations in Country Groups T and V, with the exception of the People's Republic of China, Iran, Syria, and South African military and police groups. Id. at 64,674-75.

On February 24, 1994, the Department's Bureau of Export Administration changed the definition of "supercomputer" to encompass machines with a CTP equal to or exceeding 1,500 Mtops, up from 195 Mtops. 59 Fed. Reg. 8848 (1994) (to be codified at 15 C.F.R. pts. 770, 772, 773, 776, 799). At the same time, the Bureau extended general license availability for exports to most Western nations for computers functioning at 1,000 Mtops or less. Id. For exports to countries on the "Nuclear Nonproliferation Special Country List," general license availability was increased to cover machines with a CTP of 500 Mtops or less. Id. General license cut-offs for exports to the People's Republic of China and the countries of the former Soviet Union were also raised to 260 Mtops. Id.

Continuing its rapid pace, the Bureau, on March 21, 1994, lifted licensing requirements on exports to South Korea of computers operating up to, but not including, 1,500 Mtops (supercomputers). 59 Fed. Reg. 13,196, 13,197 (1994) (to be codified at 15 C.F.R. pts. 770, 771, 773, 774).

Finally, on April 4, 1994, with the establishment of general license availability for shipments of computers of 1,000 Mtops or less to the People's Republic of China and to Country Groups Q, W, and Y, the licensing requirements and CTP levels existing as of October 1994 were completed. 59 Fed. Reg. 15,621 (1994) (to be codified at 15 C.F.R. pts. 771, 774).

108 "Terrorist-supporting" nations were identified as Cuba, Libya, Iran, Iraq, Sudan, North Korea, and Syria. U.S. Lifts Curbs on High-Tech Exports Including Telecom Equipment, Computers, 11 Int'l Trade Rep. (BNA) No. 14, at 530, 530 (Apr. 6, 1994) [hereinafter U.S. Lifts Curbs].

ceased to exist on March 31, 1994. Former COCOM nations have agreed to set up a successor multilateral regime designed to impede weapons proliferation by restricting trade in dangerous arms and sensitive technologies. Restrictions most likely will target "rogue" nations such as Iran, Iraq, Libya, and North Korea. Members of the new organization could eventually include nations not associated with COCOM, such as the former Communist nations of Hungary, Poland, the People's Republic of China, Russia, and many other former Soviet Republics. Until the new regime is in place, COCOM members have agreed to continue controls on the "most sensitive items and arms as these have been [identified] in the COCOM lists." This agreement will be monitored through group meetings and bilateral discussions "that will assure [the United States] over the coming months that [each nation's] policies are essentially the same."

4.4. Assessment of the New Regulations

Prior to the implementation of the Clinton administration's new export promotion plan, eighty percent of all export license applications were requested in order to export computers and high-technology, such as electronics and telecommunications equipment. Overzealous export regulation in the name of national security or foreign policy had stunted U.S. economic progress. The recent changes in export policy regarding computers and high-technology equipment represent a step toward alleviating this problem.

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115 Id.
116 See TPCC Plan, supra note 6, at 1645.
117 See id. (quoting from statement of Commerce Secretary Ronald H. Brown).
4.4.1. National Security vs. Business Competitiveness

The most beneficial changes for the U.S. computer and high-technology industries represented by the new export promotion plan are the liberalization of controls on goods and technology that are no longer truly sensitive or are freely available overseas, and a commitment to eliminating unilateral export controls, including reexport controls, unless they are mandated by "overriding national interests." Thus far, industry reaction to the administration's plan has been positive.

Some critics argue, however, that the deregulation of "dual-use" technology such as computers and telecommunications equipment represents a dangerous preference for U.S. business interests over national security concerns. These critics suggest that the administration, in its rush to promote exports and jobs through deregulation, has contradicted its own policy of non-proliferation. Critics note that the recently decontrolled high-technology equipment is exactly the type of equipment that is needed by "rogue" states to increase their weapons development and production capabilities. To

118 Id. at 1659.

119 Responding to export decontrols to China and the former Soviet Union, made official on Apr. 4, 1994, Christopher A. Padilla, director of federal government affairs for AT&T, stated: "This is a blockbuster... It's exactly what we've been looking for. This clearly is a home run for the Clinton administration." U.S. Lifts Curbs, supra note 108, at 530. Also commending the administration, Dick Iverson, president and chief executive officer of the American Electronics Association, said "President Clinton's team deserves a round of applause." Id.


121 See Weymouth, supra note 120, at A19 (quoting then Secretary of Defense Les Aspin calling nuclear weapons the danger "that most urgently and directly threatens America at home and American interests abroad," and calling for a counter-proliferation initiative); Kaslow, supra note 89, at 12 (quoting Kenneth Luongo, arms-control and international security expert for the Union of Concerned Scientists, claiming that "[Clinton Administration personnel] have not fully grasped the contradiction they're living.").

122 See Weymouth, supra note 120, at A19. In response to the Commerce Department's March 31, 1994 announcement outlining its latest decontrol, Gary Milhollin, director of the Wisconsin Project on Nuclear Arms Control, stated:

It is a fantasy to think that you can ship strategic computers to
these observers, deregulation of this high-technology equipment is detrimental to U.S. national security.

This argument is admirably practical and cautionary, but in the end it fails to recognize post-Cold War trade realities. The old U.S. export regulations governing computers and high-technology equipment were crafted at a time when the United States was clearly the leader in developing and manufacturing these types of goods. The Clinton administration, while sensitive to proliferation concerns, realizes that high-technology equipment is available now from many more countries than it was in the past. If a country cannot receive high-technology equipment from the United States, it now can turn to any one of several other countries to obtain the desired goods. In this landscape, the old U.S. export controls are outdated—more than simply being ineffective, they are harmful to U.S. businesses as well.

Unnecessarily strict export controls cannot be maintained if the United States hopes to remain competitive in world markets, which it must, given the importance of exports places like China and Romania and not have them end up in places like Iran. . . . [The recent deregulation] means that every bomb and missile maker in the world will save time and money by using what are practically the most powerful U.S. computers available. . . . The happiest people in the world tonight are in Pakistan, India, and North Korea, because they can now obtain, through front companies, computer power that previously was beyond their wildest dreams.


123 "A lot of these [export control] laws were written in another era - that was when the only way you could buy anything of quality was from the US [sic] . . . That's just not the case anymore. Many countries out there have huge significant technology sectors or capacities." Kaslow, *supra* note 89, at 12 (statements of an unnamed "senior [Clinton] administration official").

124 An Iranian buyer of high-tech machinery has stated: "[J]ust ask anyone. It's easy to get around the controls. America's European and Asian friends are perfectly happy to accommodate requests for what is unavailable from the US [sic] . . . ." Kaslow, *supra* note 89, at 12.

125 In 1992, then Acting Secretary of State Lawrence S. Eagleburger, stated:

We are in an era, where, if we don't wake up to the fact that how we handle export policy is crucial to the whole question of our international competitiveness, we are going to be in very deep trouble. . . . I see it every day in this office, where the French or the Germans or the British or the Japanese or whomever because of the
to the U.S. economy.\textsuperscript{126} The new export promotion plan does not ignore weapons proliferation concerns;\textsuperscript{127} rather it attempts, through control of only the most sensitive high-technology equipment, to balance these concerns with the important issue of U.S. competitiveness in an increasingly global economy.\textsuperscript{128}

4.4.2. Efficiency Issues

The new export promotion plan also attempts to increase efficiency. Deregulating the export of a greater number of non-critical or widely available goods allows the Department to redirect resources that otherwise would be involved in license processing, license referral, and in the policing of way in which their government supports exports ... has an advantage over the American competitor that drives me crazy.


\textsuperscript{126} Commerce Secretary Ronald Brown emphasized the economic significance of loosening export regulations in his statement to the House Subcommittee:

\begin{quote}
Between 1986 and 1993, for example, nearly 40 percent of the growth of the Nation's Gross Domestic Product resulted from U.S. exports of goods and services. Between 1986 and 1992 (the most recent year for which data are available), the number of jobs associated with exports rose from 6.7 million to over 10 million. Moreover, jobs supported by goods exports paid 13 percent more than the average wage.
\end{quote}

\textit{Prepared Statement By Ronald Brown, supra note 12.}

For another statement on the economic impact of the relaxing of export regulations, see also Kaslow, \textit{supra} note 89, at 12 (quoting Jeffrey Garten, the Undersecretary of Commerce for International Trade: “The ability to sustain [the current economic recovery] depends on the ability to penetrate world markets.”).

\textsuperscript{127} The administration's current involvement in the creation of a successor to COCOM is evidence of its focus on restricting the access of “rogue” states to truly sensitive arms and technology. \textit{See supra} notes 99-115 and accompanying text.

\textsuperscript{128} A statement issued from the White House elaborated on this point:

\begin{quote}
From the outset, this Administration has been committed to combating the proliferation of dangerous weapons and sensitive technologies, while at the same time insuring that American workers and firms remain the most competitive in the world. Our policies seek to balance these goals. As global technology advances, export controls must be updated in order to remain focused on those items that still make a difference to programs of proliferation concern.
\end{quote}

\textit{Friedman, supra note 122, at D5.}
potential reexport transactions. These resources now can be used to guard more effectively against truly harmful reexports of critical weapons proliferation technologies. An additional benefit of these changes is a reduction in paperwork and a corresponding facilitation of the entire licensing process. 129

4.4.3. Questions and Recommendations

The Clinton administration's new export promotion plan is comprehensive and well-conceived but raises certain questions and poses certain problems that the administration and the Department will need to address. For example, while the administration has implemented time limits within which the Department must process license applications 130 and while the Department itself is committed to improving license processing and interagency referrals generally,131 it is not clear whether its efforts to streamline the application and referral process will be reviewed on a regular basis and, if so, at what time intervals. Ideally, the Department should institute frequent reviews in order to monitor the progress of the new plan.

Further, given the collapse of the Democratic West versus Communist East dichotomy, and the resulting "New World Order," the Department should review and refine the CCL continually in order to maximize U.S. export potential. When the Department determines that a controlled item, or its functional equivalent, actually is available from foreign sources, U.S. export controls on that item should be changed or removed altogether. While the new export promotion plan does call for annual review of unilateral controls,132 a continual, "rolling" review throughout the fiscal year would better promote the interests of U.S. businesses by facilitating the immediate alteration or elimination of any unnecessary or excessive export controls.

This type of constant refinement, to the extent that it

129 The Department of Commerce received roughly 25,000 license applications in 1993. Export reforms implemented as of early April 1994 are expected to reduce this figure by approximately 50 percent. See U.S. Lifts Curbs, supra note 108, at 530.
130 TPCC Plan, supra note 6, at 1660.
131 Id.
132 Id. at 1659.
increases the amount of detail in the already complex Regulations, could result in greater delays for potential U.S. exporters due to an increase in the amount of time it takes the Department to process validated licenses. Any potential increase in processing time, however, theoretically will be offset by a concomitant decrease in the number of items requiring validated licenses in the first place. In other words, general licenses will be expanded, under the new export promotion plan, to cover an increasing number of regulated items. As the number of items falling under general license authorization increases, the burden on the Department’s license processing mechanisms will decrease accordingly. Additionally, the proposed streamlining of the Department’s procedures and interagency dealings, to the extent that it increases the Department’s efficiency, will counterbalance any potential increase in license processing time due to an increase in the complexity of the Regulations.

5. CONCLUSION

The Clinton administration’s new export promotion plan is a realistic response to present economic conditions. The collapse of the Communist empire at the end of the 1980s created an environment in which Cold War economic planning was outdated and unnecessary. The administration’s export promotion plan updates certain outmoded and inefficient U.S. export regulations that were based on Cold War economic and military theories. The plan does this while at the same time striking a delicate balance between national security concerns and the interests of U.S. businesses.

The new plan is still in its infancy and it remains to be seen if it ultimately will be successful in increasing U.S. exports of high-technology items over the long term. The plan will require constant monitoring and refinement in order to achieve its objectives, but at present, it has eliminated certain long-standing obstacles to U.S. computer and high-technology exporting.
APPENDIX I: COUNTRY GROUPS, THE COMMERCE CONTROL LIST, AND EXPORT CONTROL CLASSIFICATION NUMBERS

The Commerce Department's licensing system is organized around Country Groups,\textsuperscript{135} the Commerce Control List,\textsuperscript{134} and Export Control Classification Numbers.\textsuperscript{135} Under the Regulations, all foreign countries are separated into seven Country Groups, lettered $Q$, $S$, $T$, $V$, $W$, $Y$, and $Z$.\textsuperscript{136} A particular export may be allowed to one Country Group and denied to another, or allowed to several and denied to some, etc. Foreign policy and national security concerns guide both the placement of a particular nation into a particular Country Group and the permissibility of exports to that nation and Country Group. For example, Group $Z$ is comprised of North Korea, Vietnam, and Cuba.\textsuperscript{137} U.S. foreign policy greatly restricts trade with each of these nations; they therefore are placed in their own Country Group for export purposes.\textsuperscript{138}

The Commerce Control List ("CCL") is set up and maintained by the Department's Bureau of Export Administration.\textsuperscript{139} It lists all commodities and technology subject to the Department's export controls. The CCL is divided into ten numbered categories including materials, electronics, and avionics.\textsuperscript{140} Each of these categories, in turn, is divided into five product groups, lettered $A$ through $E$.

\begin{itemize}
  \item \textsuperscript{135} 15 C.F.R. § 770, Supp. 1 (1993).
  \item \textsuperscript{134} Id. §§ 799.1, § 799.1, Supp. 1.
  \item \textsuperscript{135} Id. § 799.1(c).
  \item \textsuperscript{136} Id. § 770, Supp. 1.
  \item \textsuperscript{137} Id.
  \item \textsuperscript{138} See Smith, supra note 21, at 117 & n.26.
  \item \textsuperscript{139} 15 C.F.R. § 799.1(a) (1993).
  \item \textsuperscript{140} The categories are as follows:
    \begin{enumerate}
      \item Materials
      \item Materials Processing
      \item Electronics
      \item Computers
      \item Telecommunications and Cryptography
      \item Sensors
      \item Avionics and Navigation
      \item Marine Technology
      \item Propulsion Systems and Transportation Equipment
      \item Miscellaneous
    \end{enumerate}
\end{itemize}

\textit{Id.} § 799.1(b)(1).
Specific items or sets of related items listed in each product group are further identified by a two-digit number indicating the particular type of export control placed on that item or set of items. It is important to note that the type of export control indicated by this two-digit number may not be the only control affecting the item in question. Lastly, each commodity or type of technology is assigned a code letter, \( A \) through \( I \), which indicates the documentation requirements necessary to export that item to a nation within any particular Country Group.

The five groups are as follows:

(A) Equipment, Assemblies and Components
(B) Production and Test Equipment
(C) Materials
(D) Software
(E) Technology

The two-digit numbering system is as follows:

- 01-19—COCOM controls
- 20-39—Missile Technology controls
- 40-59—Nuclear non-proliferation controls
- 60-79—Chemical and biological weapons controls
- 80-99—Other controls

COCOM no longer exists. See section 4.1, supra, for a discussion of the traditional mission of COCOM, and section 4.3, supra, for a discussion of the organization’s dismantling.

The CCL lists the specific reason(s) for controlling the export of each item or set of related items. There are six possible reasons for control: 1) national security; 2) missile technology; 3) nuclear proliferation; 4) chemical or biological warfare concerns; 5) foreign policy controls; and 6) short supply concerns. For example, specified “[e]lectronic computers and related equipment,” along with “assemblies’ and specially designed components therefor” are given the export control number “01.” This indicates control of exports of these computers and assemblies for COCOM reasons. An examination of the section, however, indicates that these items are also controlled for missile technology and nuclear proliferation concerns.
APPENDIX I (CONTINUED): COUNTRY GROUPS

Country Group Q
   Romania

Country Group S
   Libya

Country Group T
   North America

   Northern Area:
      Greenland
      Miquelon and St. Pierre Islands

   Southern Area:
      Mexico (including Cozumel and Revilla Gigedo Islands)

Central America

   Belize
   Costa Rica
   El Salvador
   Guatemala
   Honduras (including Bahia and Swan Islands)
   Nicaragua
   Panama

Bermuda and Caribbean Area:
   Bahamas
   Barbados
   Bermuda
   Dominican Republic
   French West Indies
   Haiti (including Gonave and Tortuga Islands)
   Jamaica
   Leeward and Windward Islands
   Netherlands Antilles
   Trinidad and Tobago

145 Id. § 770, Supp. 1 (1993). “Canada is not included in any country group and [is] referred to by name throughout the Export Administration Regulations.” Id.
APPENDIX I (CONTINUED): COUNTRY GROUPS

South America

Northern Area:
Colombia
French Guiana (including Inini)
Guyana
Surinam
Venezuela

Western Area:
Bolivia
Chile
Ecuador (including the Galapagos Islands)
Peru

Eastern Area:
Argentina
Brazil
Falkland Islands (Islas Malvinas)
Paraguay
Uruguay

Country Group V
All countries not included in any other country group
(except Canada).

Country Group W
Czechoslovakia
Poland

Country Group Y
Albania
Bulgaria
Cambodia
Estonia
Laos
Latvia
Lithuania
Mongolian People's Republic
The geographic area formerly known as the Union of
Soviet Socialist Republics
Country Group Z
North Korea
Vietnam
Cuba
# APPENDIX II: PERFORMANCE OF SELECTED COMPUTERS

<table>
<thead>
<tr>
<th>COMPUTER</th>
<th>Mtops</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBM Compatible Personal Computer (&quot;PC&quot;)</td>
<td></td>
</tr>
<tr>
<td>(w/386-33 MHz Chip)</td>
<td>4</td>
</tr>
<tr>
<td>PC (w/486-33 MHz Chip)</td>
<td>12.4</td>
</tr>
<tr>
<td>Apple Macintosh (Quadra 700)</td>
<td>12.5</td>
</tr>
<tr>
<td>Apple Macintosh (Quadra 950)</td>
<td>17</td>
</tr>
<tr>
<td>PC (w/486-66 MHz Chip)</td>
<td>25</td>
</tr>
<tr>
<td>PC (w/Pentium Chip)</td>
<td>67</td>
</tr>
<tr>
<td>Sun Workstation (Model 402)</td>
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<tr>
<td>IBM Workstation (RISC/6000 model 580)</td>
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<tr>
<td>Hewlett Packard Workstation (9000 model 755)</td>
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<tr>
<td>IBM Workstation (RISC/6000 model 990)</td>
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<td>Convex Mainframe (Model C3440)</td>
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</tr>
<tr>
<td>DEC 4000 Departmental Computer</td>
<td>374</td>
</tr>
<tr>
<td>Sun Server 1000 (8 SuperSPARC processors)</td>
<td>446</td>
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<tr>
<td>Sun Server 2000 (20 CPUs)</td>
<td>877</td>
</tr>
<tr>
<td>DEC Server (10000-660 Alpha)</td>
<td>1302</td>
</tr>
<tr>
<td>IBM Mainframe ES/9000 (Model 820)</td>
<td>1769</td>
</tr>
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146 This Appendix is an abbreviated version of a similar table found in *TPCC Plan, supra* note 6, at 1658. [https://scholarship.law.upenn.edu/jil/vol15/iss4/4](https://scholarship.law.upenn.edu/jil/vol15/iss4/4)