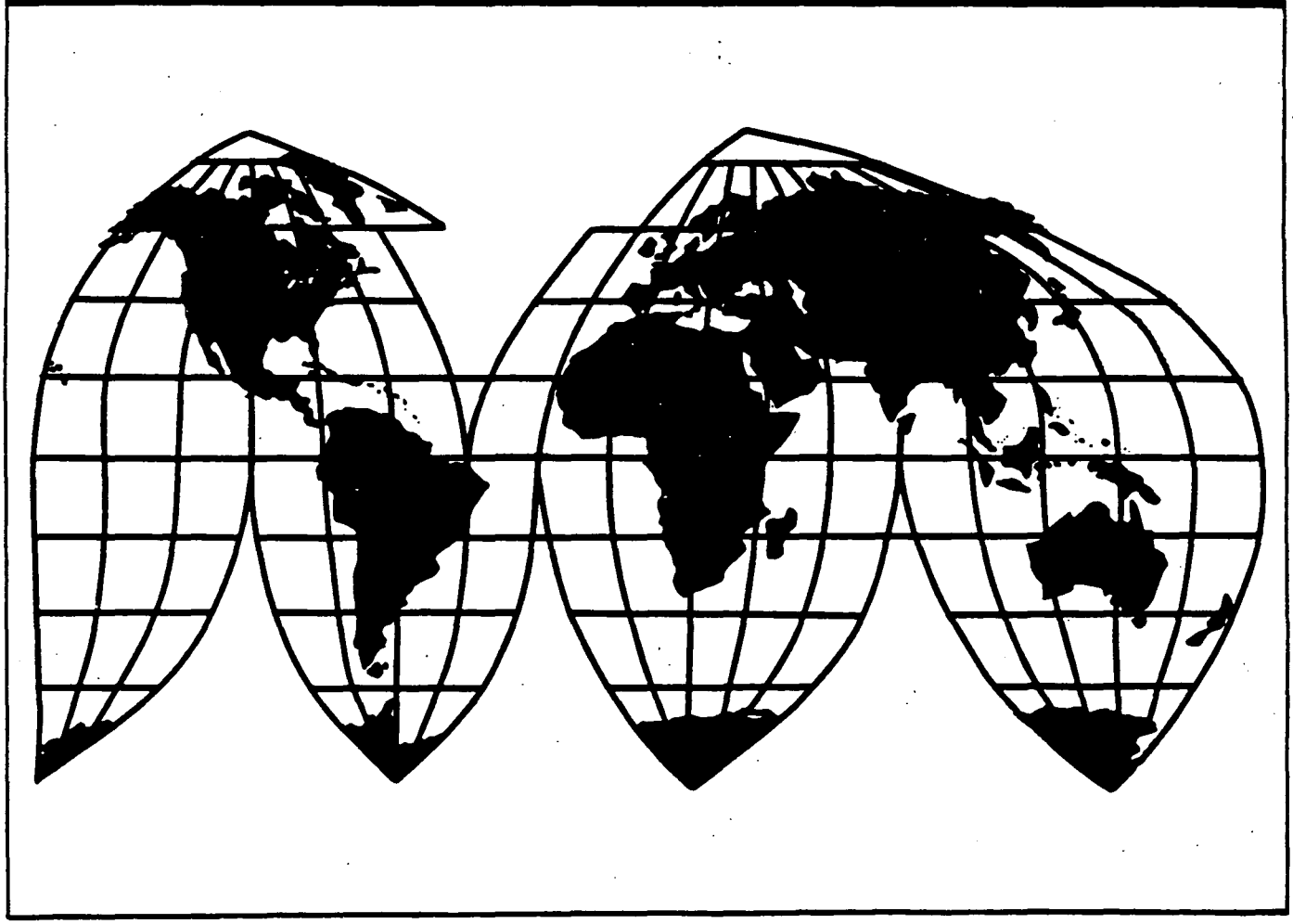
Steel Semiannual Monitoring Report

Special Focus: Middle East Steel
Special Focus: Environmental Regulations

Investigation No. 332-327

Publication 2682 **September 1993**

U.S. International Trade Commission



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U.S. International Trade Commission

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NOTE

The information and analysis in this report are for the purpose of this report only. Nothing in this report should be construed to indicate how the Commission would find in an investigation conducted under other statutory authority covering the same or similar matter.

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Purpose and Scope of Report

On July 9, 1992, at the request of the Committee on Ways and Means, U.S. House of Representatives, and in accordance with the provisions of section 332(g) of the Tariff Act of 1930 (19 U.S.C. 1332 (g)), the United States International Trade Commission instituted investigation No. 332-327, Steel Semiannual Monitoring Report. The purpose of this investigation is to provide semiannual monitoring reports to the House Committee on Ways and Means concerning the status of, and prospects for, the U.S. steel industry in the post-Voluntary-Restraint-Agreement (VRA) competitive environment, from January 1991 through December 1994.

The series of reports, to be submitted over a 3-year period beginning in September 1992, consist each year of two semiannual reports (submitted in April 1993, 1994, and 1995 and September 1992, 1993, and 1994) that combine concise analysis of global industry trends and competitiveness issues with key product trade information. Each of the six reports contains detailed U.S. trade information (e.g., data by product and key country suppliers and/or markets); a brief summary of changes in U.S. trade flows; highlights of recent major developments in the U.S. steel industry; and certain international steel industry comparisons. Each of the September issues of these reports also contains a short analysis of country/regional industry developments and/or competitiveness issues, such as environmental regulation, technological developments, and globalization.

Each of the April issues contains an analysis focusing primarily on developments and conditions in the U.S. industry and highlights significant developments in the industry's competitiveness during the post-VRA period. The calendar year data that form the basis for this analysis are gathered by questionnaires requesting information on industry operating performance and competitive factors (e.g., capacity, production, shipments, financial operations, capital expenditures and R&D, technology, and environmental expenditures) sent to all raw steel producers as well as selected steel processors.

Two reports have been transmitted to the Committee to date—in September 1992 and June 1993.[1] This report, the third in the series, focuses on developments in the Middle East steel industry and on the U.S. industry's response to environmental regulations. In addition, the report provides detailed breakouts on U.S. shipments and U.S. trade for 20 major groups of steel mill products and certain fabricated steel products, and information on other recent developments in the U.S. industry. Appendix A contains a more detailed overview of the structure of this report and notes on its product coverage and methodology. Appendixes B and C, respectively, contain the study request letter from the Chairman of the House Committee on Ways and Means and the notice of the Commission's investigation. Appendix D contains a description of the products subject to this investigation and definitions of certain terms.

Organization of Report

In this series of reports, the *Special Focus* addressing developments and conditions in the U.S. and global steel industry examines competitive issues such as privatization, environmental regulation, technological developments, foreign industries, and globalization. The section on *Recent Steel Industry Developments* highlights major events in both the U.S. and foreign steel industries. The table and figure providing *U.S. Industry Highlights* identify trends in U.S. average annual and monthly steel shipments; imports, exports, and import penetration; and data on raw steel production, employment, and financial operations. The figures and tables highlighting *International Production and Consumption* indicate the geographic distribution and trend of world production and apparent consumption. The tables providing *International Trade Highlights* identify average annual import and export trends for various countries/country groups over a 20-year period. The section on *Recent Trends in U.S. Trade* explains principal product category shifts in U.S. trade flows reflected by statistical tables contained in appendix F, tables F-1 through F-37.

Product Coverage and Trade Policy Perspective

The products covered in this report were subject to import quotas under VRAs in effect from late 1984 through March 31, 1992. The President undertook the VRA program after the USITC made an affirmative determination under section 201 of the Trade Act of 1974 (19 U.S.C. 2251) with respect to imports of certain carbon steel products.[2] After receiving the Commission's report on that investigation, the President announced that he was not taking action under section 203 of the Trade Act but instead would negotiate bilateral restraints with steel-exporting countries to limit U.S. imports of steel and would enforce more vigorously the laws against unfair trade practices.[3] Congress later passed the Steel

[1] The report transmitted in June 1993 was originally scheduled to be transmitted in April 1993, but was postponed to ensure that the study contained complete survey results.

[2] Executive Communication 4046, Sept. 18, 1984 (H. Doc. 98-263).

[3] USITC, *Carbon and Certain Alloy Steel Products*, (investigation No. TA-201-51), USITC publication 1553, July 1984.

Stabilization Act (title VII of the Trade and Tariff Act of 1984), which granted the President authority, for the 5-year period ending September 30, 1989, to enforce the terms of the bilateral steel agreements but which set certain conditions for such authority. The President was required to make an annual affirmative determination that major steel companies were committing substantially all of their net cash-flow from steel operations to reinvestment and modernization of their steel operations and that a certain amount of funds was committed to worker retraining.[4] In July 1989 the President proposed a 2-1/2 year extension of the program. Congress later passed the Steel Trade Liberalization Program Implementation Act, extending the President's enforcement authority through March 31, 1992.[5]

As part of the Steel Trade Liberalization Program and the Bilateral Consensus Agreements negotiated under that umbrella, countries agreed to work towards a Multilateral Steel Agreement (MSA) that would address the underlying causes of unfair trade in steel. The MSA would eliminate tariffs, such nontariff measures as quotas, and most subsidies in the steel sector. The United States and 34 other countries took part in negotiations for an MSA under the general auspices of the General Agreement on Tariffs and Trade (GATT). The MSA negotiations were suspended on March 31, 1992, the same day that the VRA program expired. Negotiations resumed in December 1992, and the next series of meetings are scheduled during October-December 1993. Since the end of the VRAs, unfair trade petitions have been filed on many items including wire rope, bar, steel rail, pipe and tube, and other steel products once covered by the VRAs. In addition, the U.S. industry filed a large number of antidumping and countervailing duty petitions on flat-rolled steel products from 21 foreign countries. Appendix E shows the status of unfair trade cases filed on steel products and raw materials since late 1991.

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[4] Public Law 98-573, Oct. 30, 1984, (98 Stat. 3043).

[5] Public Law 101-221, Dec. 12, 1989, (103 Stat. 1886) (19 U.S.C. 2253 note).

Developments in the Middle East[6] Steel Industry

Regional Overview

Despite worldwide overcapacity in steel production, the Middle East is purposefully developing a steel industry to meet regional demand for steel. In the Middle East, the incentives for domestic steel production include the abundant cheap natural gas in the region, the desire to save its valuable foreign exchange, and the desire to demonstrate to the rest of the world its domestic industrial development.[7,8]

The steel industry in the Middle East (figure 1) evolved after World War II under government-sponsored industrialization. In order to foster growth in their steel industries, Middle Eastern governments adopted protective measures to minimize steel mill product imports to the region. Tariffs on steel imports remain at about 20 percent ad valorem in most Middle Eastern nations.[9] Despite these tariffs, the region is a net importer of steel, producing only about 1 percent of total world steel production and only about one-half of its own total steel consumption. Expected improvements in steel demand in the region because of reconstruction and industrialization combined with the desire to broaden the composition of exports are leading Middle Eastern steelmakers to try to increase capacity and to modernize existing facilities (see country profiles). The ultimate objective is regional self-sufficiency in steel.

Production

The main steel-producing countries in the Middle East are Iran, Egypt, Saudi Arabia, and Qatar. In 1992, these four countries accounted for nearly 7.9 million metric tons (mt) or 97 percent of the 8.1 million mt of total crude steel produced in the region. Iran was the leading producer with 2.9 million mt; Egypt followed with 2.5 million mt; Saudi Arabia, 1.8 million mt; and Qatar, 0.6 million mt.[10] (Figure 2)

The Middle Eastern steel industries are owned largely by their respective national governments. Iran's National Iron and Steel Company (NISCO) is a governmental umbrella organization that has enjoyed monopolistic control over the entire Iranian steel industry since the overthrow of the Shah in 1979. The national Metallurgical Industries Corp. in Egypt, which reports to the Ministry of Industry, owns all five Egyptian steel facilities.[11] Despite Egypt's stated policy of widespread privatization under the direction of the International Monetary Fund (IMF), Egypt has no plans to privatize its steel industry, for reasons of national security.[12] The Saudi Basic Industries Corp. (SABIC) owns the main Saudi Arabian iron and steel works, the Al-Jubail works at Hadeed. And finally, the Qatar Steel Company (QASCO) is 70 percent owned by the Qatari Government, with the remaining 30 percent Japanese owned (20 percent by Kobe Steel and 10 percent by the trading house Tokyo Boeki). Table 1 presents a list of Middle East steel producers.

Aside from older steel works in Egypt and Iran, steel producers in the Middle East generally use the lower cost, small-scale direct reduction (DR)-electric arc furnace (EAF) method of producing steel. The DR-EAF steelmaking method can produce both basic steel products, such as rebar, which is used in construction, and higher quality steel products, such as seamless tubes, which are in high demand in oil-producing countries. The EAF is preferred in the Middle East because it is capable of producing high quality steel products on a small scale at economical costs. In the Middle East, 62 percent of the total crude steel production in 1991 came from EAFs. Egypt produced 54 percent of its 1991 steel in EAFs, 39 percent in basic oxygen furnaces (BOFs), and the remainder in open hearth furnaces. In 1991, Iran produced 25 percent in EAFs and 75 percent in BOFs. Both Saudi Arabia and Qatar produce 100 percent of their steel in EAFs.[13]

Use of continuous casters is widespread in the Middle East. In 1992, 100 percent of steel production was continuously cast in Iran, Saudi Arabia, and Qatar, and 96 percent in Egypt.[14] Although use of scrap as the primary EAF feed is more common elsewhere, the lack of a mature scrap industry and favorable conditions for direct reduced iron (DRI) production in

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[6] For this article, the Middle East is defined as the countries between Egypt and Iran, but not Turkey (see Figure 1). The focus of the article is on the four major steel producers: Iran, Egypt, Saudi Arabia, and Qatar.

[7] Thirty-one percent of world natural gas reserves are in the Middle East. U.S. Department of the Interior, Bureau of Mines, *Minerals of the Middle East, 1990 Minerals Yearbook*, 1992.

[8] Natural gas prices in the Middle East are only one-third or one-fourth of European and U.S. prices. Angus Hindley, "Trial by Fire for Steel Plans," *Middle East Economic Digest*, May 21, 1993, p. 3.

[9] Due to the lack of U.S. diplomatic ties with Iran, tariff information is not available.

[10] International Iron and Steel Institute (IISI), *Steel Statistical Yearbook 1992* (Brussels, 1992).

[11] However, 10 percent of one of the producers, the Alexandria National Iron and Steel Co. (ANDSK), is Japanese-owned.

[12] U.S. Department of State telegram, "Egyptian Industrial Outlook Report: Minerals," message reference No. 05821, prepared by U.S. Embassy, Cairo, Apr. 4, 1993.

[13] Ibid.

[14] IISI.

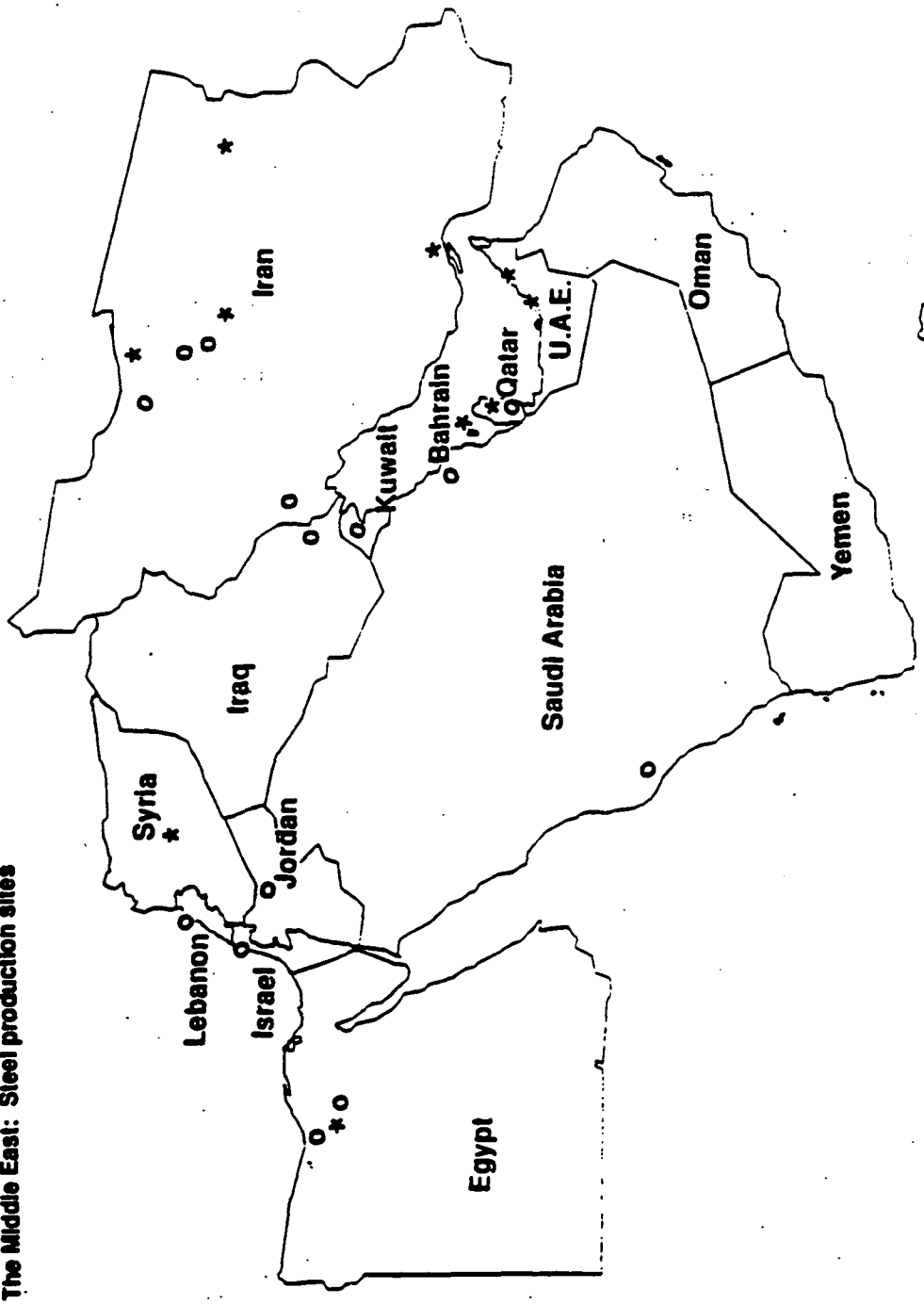
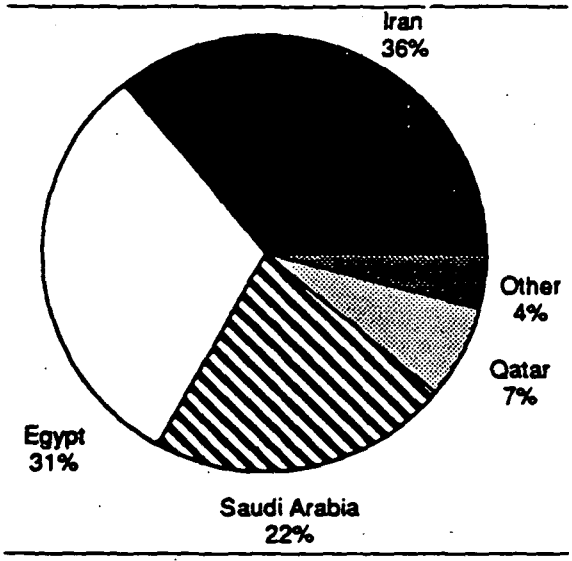


Figure 1
The Middle East: Steel production sites

Source: Metal Bulletin Books, *Iron and Steel Works of the World; Steel Times International; American Metal Market.*

Figure 2
Share of Middle East steel production by countries, 1992



Source: International Iron and Steel Institute (IISI), *Steel Statistical Yearbook, 1992* (Brussels, 1992).

the Middle East has led to the construction of significant DRI capacity. Therefore, DRI is being substituted for scrap in EAFs. The Middle East is well suited for DRI production because iron ore feedstock is easily available from local and overseas sources, and cheap natural gas is abundant. DRI production in the Middle East reached 3.3 million mt in 1991, accounting for 17 percent of total world production.[15] Of this total, Saudi Arabia and Egypt each produced 34 percent, Qatar 17 percent, and Iran 14 percent.

Consumption and Trade

Apparent consumption in the Middle East was cut almost in half during the 1980s, falling from 15.4 million mt in 1983, to 8.3 million mt in 1989, because of soft construction markets and the many regional conflicts (figure 3). In contrast to most regions of the world, however, steel demand has increased in the Middle East during the 1990s because of the construction boom that followed the Iran-Iraq and Gulf wars and the renewed emphasis on regional industrial development. Apparent steel consumption increased by 9 percent from roughly 10.2 million mt in 1990, to 11.1 million mt in 1991, and then by 8 percent to roughly 12.0 million mt in 1992.[16] This growth is expected to continue, though at a slower rate, into the next century, with Middle East steel consumption projected to reach 15 million mt by the year 2000. The three largest steel consumers in the Middle East are Iran, Egypt, and Saudi Arabia. In recent years, Israel has ranked fourth in steel consumption largely because of its construction of new settlements.

The Middle East is a net importer of steel products. Reflecting the trend in consumption, imports by the Middle Eastern countries dropped from 13.8 million mt in 1983, to a low of 3.6 million mt in 1989, as a result of increased regional production and decreasing demand (figure 4). However, the construction boom that followed the Iran-Iraq and Gulf wars in the 1990s resulted in a 4-percent annual rise in steel imports from 5.5 million mt in 1990 to 5.9 million mt in 1992. The major exporters to the region are Japan, which supplied 25 percent of the Middle East import market in 1992, followed by Germany and Italy supplying 15 percent and 12 percent, respectively (figure 5). The United States supplied only about 1 percent of total Middle East imports in 1992 with more than half of those going to Saudi Arabia and Egypt.[17] The products most often imported by the Middle East include plate and hot- and cold-rolled sheet, heavy sections, and specialty steels.

Although exporting is one of the stated goals for most Middle East steel producers, they have not exported at any significant level, and most exports are intraregional. Qatar, the leading exporter, ships over 90 percent of its production to other Middle Eastern countries, chiefly Gulf countries, where it supplies 30 percent of that regional import market.[18] The Middle Eastern countries exported 1.0 million mt (roughly 14 percent of total production) of steel in 1991, of which Qatar accounted for nearly half.

The outlook is optimistic for the steel industry in the Middle East. Encouraged by recent growth in demand, steel producers are increasing capacity and modernizing current facilities as well as building greenfield plants, despite the worldwide overcapacity in steel. Newcomers to the industry, such as Syria and the United Arab Emirates, intend to take part in the growing regional steel market and are establishing their own steelmaking capabilities.

Country Profiles

Steel producers in the Middle East have announced extensive plans for facility modernization and capacity expansion that would double their existing nominal capacity. Despite these expansions, the Middle East is not expected to reach its goal of self-sufficiency in steel mill products by the end of the century, and so will continue to import to meet its demand.

[15] IISI, *Steel Statistical Yearbook 1992*.

[16] Apparent consumption data vary widely, depending on source. These estimates are calculations by USITC staff based on trade data published by IISI and the United Kingdom Iron and Steel Statistics Bureau (UKISSB).

[17] The United States has traditionally focused its steel export efforts on markets in neighboring Canada and Mexico.

[18] Hindley, "Trial by Fire for Steel Plans," p. 2.

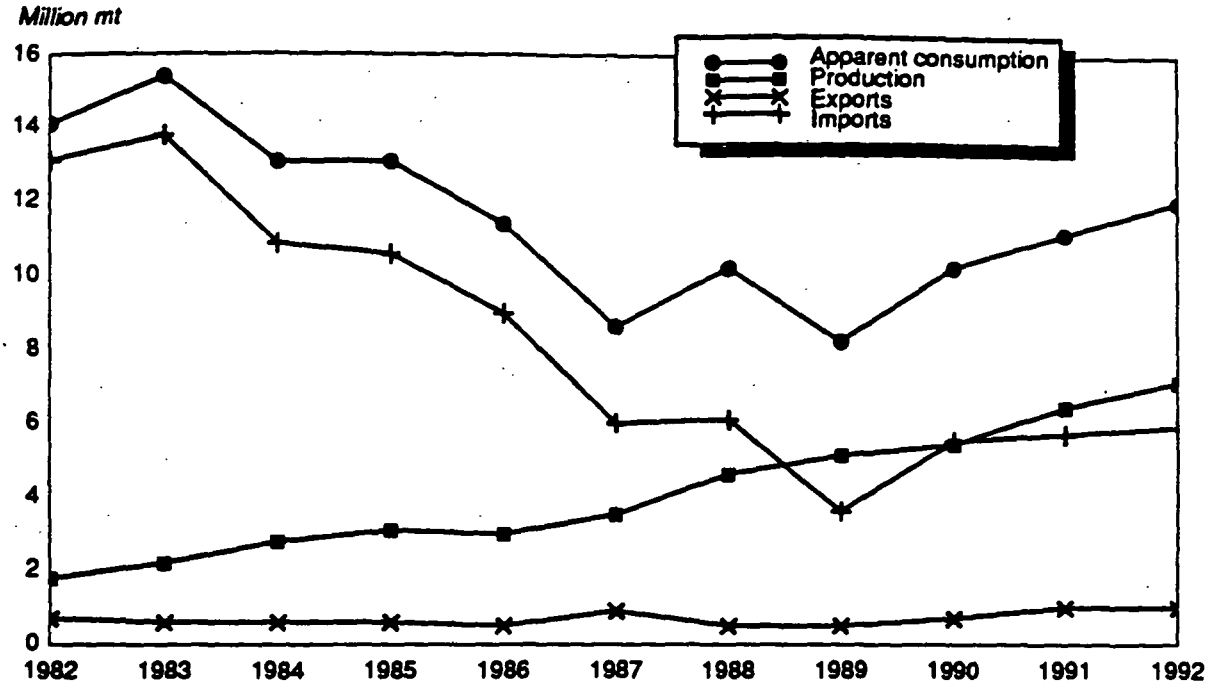
Table 1
Middle East steel producers: Country, company, steelmaking process, and products

Country	Company	Steelmaking process	Products	Nominal Capacity[1]
				(Metric tons)
Iran	Navard Va Luleh Ahwaz	(2)	Strip Pipe and tube	155,000
	Kalup Corp	(2)	Pipe and tube	100,000
	National Iranian Steel Co.			
	Isfahan	BOF	Heavy sections Medium sections Light sections Wire rod	1.9 million
	Ahwaz	EAF	Slabs and blooms	1.5 million
	Insig	EAF	Rod, bar, and sections Seamless & welded tubes	360,000
	Mobarekeh	EAF	Hot rolled sheet Cold rolled sheet Galvanized sheet	(3)
	Kaavian	(2)	Slabs, blooms, and plate	0.8 million
Egypt	Alexandria National Iron & Steel Co. (ANDSK)	EAF	Bar and rod	0.9 million
	Delta Steel Mill Co.	EAF	Bar and rod	102,000
	Egyptian Copper Works	EAF/OH	Bar	(3)
	Egyptian Iron & Steel	BOF/EAF	Heavy sections Medium sections Light sections Strip Plate	1.2 million
	National Metal Ind.	EAF/OH	Bar	236,000
Saudi Arabia	Jeddah Rolling Mill Co.	(2)	Bar and coil	140,000
	National Pipe Co. Ltd.	(2)	Pipe	180,000
	Saudi Iron & Steel Co. (Hadeed)	EAF	Rebar and wire rod	2.2 million
	Saudi Steel Pipe Co. Ltd	(2)	Tube and pipe Galvanized tube and pipe	(3)
Qatar	Qatar Steel Co. Ltd.	EAF	Bar	526,000
Iraq[4]	State Company for Steel Ind.	EAF	Reinforcing bars	(3)
Israel	Middle East Tube Co. Ltd.	(2)	Tube and pipe	65,000
Jordan	Jordan Iron & Steel Industry Co. Ltd.	EAF	Bar	120,000
	The Jordan Pipes Manufacturing Co. Ltd.	(2)	Pipe	24,000
	National Steel Industry Co.	(2)	Bar	120,000
Kuwait[4]	Kuwait Metal Pipe Ind.	(2)	Tube and pipe	185,000
Lebanon	Consolidated Steel Lebanon (CSL)	(2)	Bar	(3)

[1] Crude steel capacity is listed for companies with refining facilities. Finished steel capacity is listed for other entities.
[2] No crude steel production.
[3] Data are unavailable.
[4] The status of the steel works in Iraq and Kuwait has been unclear since the Gulf War.

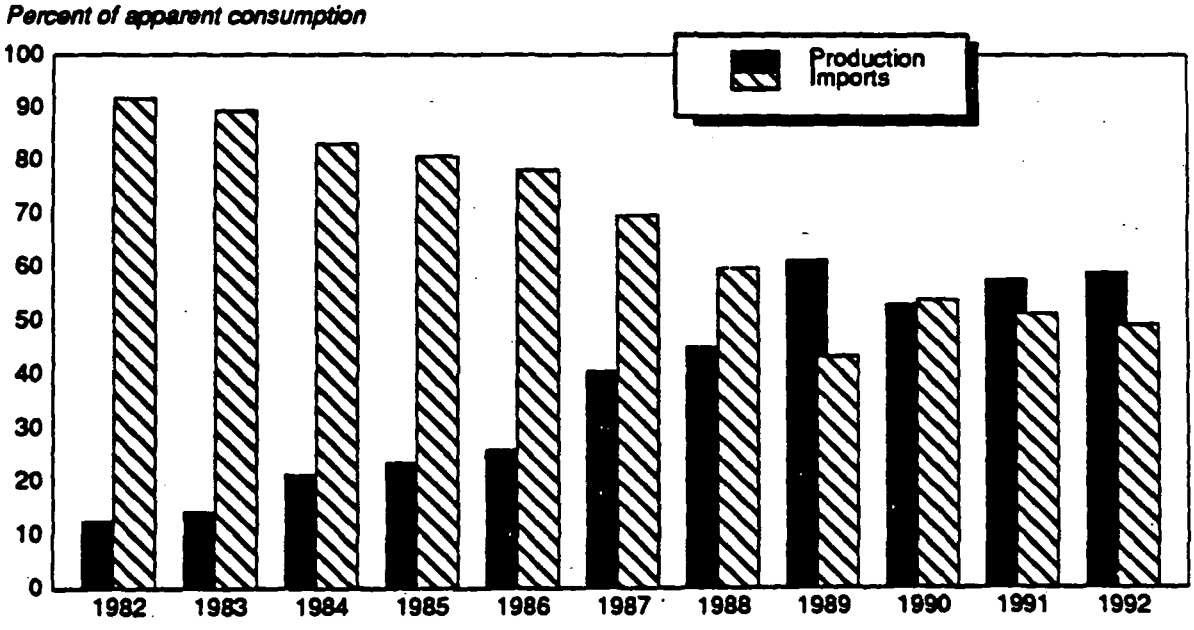
Source: Metal Bulletin Books, *Iron and Steel Works of the World*, 10th ed., 1991.

Figure 3
Middle East steel production, imports, exports, and apparent consumption



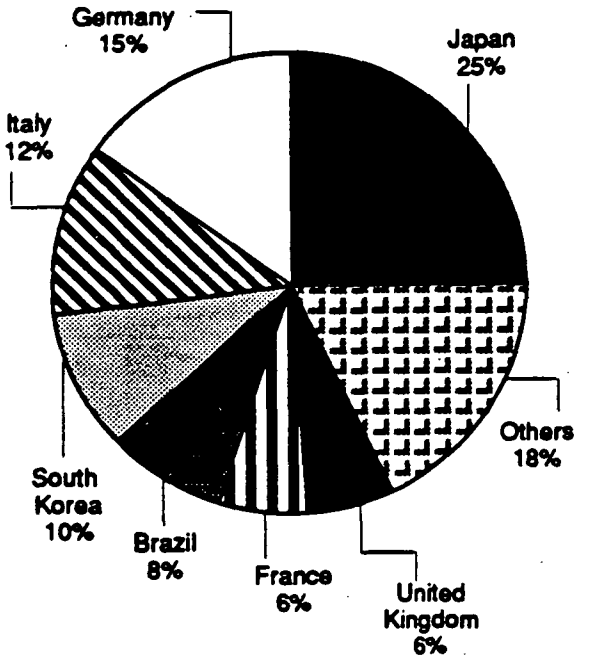
Source: Compiled on the basis of IISI and UKISSB data.

Figure 4
Middle East steel production and imports as a percent of apparent consumption



Source: Compiled on the basis of IISI and UKISSB data.

Figure 5
Share of Middle East imports by countries, 1992



Source: UKIISB, *World Trade Steel*, 1992.

Regardless, Middle East steelmakers are emphasizing the importance of improving product quality and exporting at least a small portion of their production to generate foreign exchange. Table 2 summarizes planned expenditures by each country.

Iran

The conflict-ridden 1980s did little to foster industrial growth in Iran, especially in the steel industry, which relies heavily on construction and manufacturing. The 1979 Revolution was followed by a decade of war and destruction. During the 1990s, a more moderate government is seeking to renew economic ties to the West and return to its ambitious pre-1980 industrial development plans. The Government of Iran is encouraging privatization, in general, and is attempting to attract foreign investment to promote industrial growth. The result of increased industrial development and reconstruction in Iran is increasing demand for steel products.

Facility Overview

Iran's National Iron and Steel Company (NISCO) controls four steelmaking facilities—Isfahan (ISCO), Ahwaz (ASCO), Mobarekeh, and the National Steel Industries group (INSIG)—and one rolling mill, the Kaavian rolling mill.

NISCO has a two-phased development plan that seeks to ensure the maximum utilization of the existing annual capacity of 6 million mt by 1994 and then to increase annual capacity to 10 million mt by the turn of the century.[19]

Isfahan, the oldest and the only blast furnace (BF)-basic oxygen furnace (BOF) facility in Iran, was built with Soviet aid in 1973 and has an annual capacity of 1.9 million mt. This capacity is to be increased by 1998 to 5 million mt with the addition of three BOFs and a new converter shop employing a continuous slab caster and hot-strip mill. This new technology will allow Isfahan to produce hot-rolled strip for the first time. At ASCO, the 1.5 million mt DR-EAF slab and bloom facility is being reconstructed after considerable damage during the Iran-Iraq War. In 1992, crude steel production was only 0.8 million mt at this facility. In addition, the DRI capability at ASCO is to increase to 2.5 million mt with the commissioning of new modules.[20] In the 1970s, construction began on the Mobarekeh works, one of the largest electric steelworks in the world, but delays caused by the long Iran-Iraq War will keep it from operating at full capacity until late 1993. The eight EAFs will be fed primarily DRI, and the 4.5 million mt pelletizing plant will be fed with ore from domestic mines. Plans for Mobarekeh include the installation of coil-coating facilities for galvanizing and tinplating. The fourth Iranian steel facility is the INSIG minimill at Ahwaz, which produces rod, bar, sections, and seamless and welded tubes. Its annual steelmaking capacity of 360,000 mt will increase to 620,000 mt, and its rolling capacity will expand to 1.2 million mt. Plans to align production and rolling capacities include the installation of a 540,000 mt continuous billet caster.

New developments in the Iranian steel industry include the construction of a 140,000-metric-ton-per-year (mtpy) special steel mill at Khezrabad and a 250,000-mtpy stainless slab plant at Isfaraien. Finally, under consideration is the construction of two EAF minimills—a 1.5-million-mtpy thin strip mill and a 0.5-million-mtpy rebar and light section mill.

Trade

Since the end of the Iran-Iraq War, Iran's imports of steel products have returned to pre-war levels. Except for a high of 4.1 million mt in 1983, Iran's steel imports averaged 2.4 million mt in the early 1980s, before dropping more than 50 percent to 1.1 million mt in 1986. Imports continued to drop in the late 1980s but then increased sharply by 250 percent from 0.8 million mt in 1989, to 2.8 million mt in 1990,

[19] "Middle East and Arab Steel- a Regional Profile," *Steel Times International*, May 1993, p. 40.
[20] Ibid., pp. 41-42.

Table 2
Middle East steel producers: Future capacity expansion and modernization, by countries and sites

Country	Site	Expected date of completion	Expansion and/or modernization plans
Iran	Isfahan	1998	Capacity will be increased by 3.1 million mt. The existing converter shop will be modernized as part of a $50 million contract with Nippon Steel and Sumitomo Corp. Three new BOFs will be commissioned in 1994. Danieli is building a converter shop equipped with a continuous slab caster and a hot-strip mill. This will allow Isfahan to produce hot-rolled strip for the first time.
	Ahwaz (INSIG)	(1)	Steelmaking capacity will increase 260,000 mt and rolling capacity 660,000 mt. Plans exist to install a 540,000 mt continuous billet caster as a way to align production and rolling capacities.
	Khezrabad	1995	Danieli, under a management contract with Mitsubishi Corp. is building a 140,000 mt turnkey special steel mill that will produce bearing steels, spring and free-cutting steels.
	Isfaraien	(1)	In early 1993, the Italian Simimpianti group was awarded the supply contract for a 250,000-mt stainless slab plant that will produce large ingots for use in the heavy foundry and forging industries and that will supply slab for toll rolling and export.
	Bandar Abbas	(1)	Construction of a 1.5 million mt thin strip mill is under consideration.
	Khorassan	(1)	Construction of a 0.5 million mt rebar and light section mill is under consideration.
Egypt	Alexandria	(1)	ANDSK is planning to expand its rebar and wire rod production by 50 percent with the help of NKK which helped build and manage the original facility.
	Sadat City	1996	A 100,000-mt Arab Specialty Steel Co. will be constructed at Sadat City for the production of engineering steels, welding electrodes, spring, bearing, high tensile, and stainless steels. By the year 2000, production will be increased to 140,000 mt.
Qatar	Umm Said	1995	Capacity at the original facility will be increased by 174,000 mt and a new 0.5 million mt rebar facility is being planned at the same site. Bids have been received for the new plant but concern over the possible shortage of electricity supply has delayed construction.
Syria	Al-Zara	1997	A 0.7-million-mt long products, DR-EAF steel plant is being built at Al-Zara which will include a Midrex module with 0.8 million mt capacity, 2 EAFs, 2 ladle furnaces, 2 Danieli continuous billet casters, a single strand wire rod mill, and an 18-strand continuous merchant bar mill.
United Arab Emirates	Al-Goaz	(1)	A 150,000-mt EAF-based minimill will be built to produce coiled rebar.
	Abu Dhabi or Dubai	(1)	Bids are being accepted from Japan, Germany, Italy, and the United States for the construction of a 0.6-million-mt mill in either Abu Dhabi or Dubai.
Bahrain	Bahrain	(1)	The Gulf Industrial Investment Co. (GIIC) plans to construct a 1.0-million-mt billet plant and a 200,000-mt seamless pipe plant.

[1] Information unavailable.

Sources: "Middle East and Arab Steel - a Regional Profile," *Steel Times International*, May 1993. "Egyptian Steelmaker Eyes Rebar, Rod Capacity Hike," *American Metal Market*, June 24, 1992.

during the postwar construction boom.[21] Iran's steel imports in 1991 and 1992 have dropped off slightly, to 2.7 million mt and 2.2 million mt, reflecting increased domestic production.[22] Brazil, Germany, and Japan are the three major exporters to Iran, which imports primarily such flat-rolled products as plate and sheet.[23]

NISCO, the umbrella organization that manages the Iranian steel facilities, is encouraging the individual steel plants to export as a way to reduce their dependence on central allocations of foreign reserve and to promote the higher standards of product quality and customer service necessary to succeed in the international market.[24] The most likely exporter will be the narrow slab and heavy plate producer, Kaavian Steel Co., which has an annual capacity of 0.8 million mt. Domestic customers will likely account for only about 300,000 mt, leaving 500,000 mt for export.[25] INSIG recently won a major rebar supply contract for a World Bank project, and it plans to expand its exports to gain the foreign exchange much needed for its modernization plans.[26]

Egypt

The Egyptian steel industry consists of Egyptian Iron and Steel Co., which operates an integrated BF-BOF works at Helwan; Alexandria National Iron and Steel Co. (ANDSK), which operates a DR-EAF facility at El Dikheila; and the three scrap-based minimill EAF plants of Delta Steel, Egyptian Copper Works, and National Metal Industries. Aside from a 10-percent Japanese-ownership in ANDSK, all of these plants are owned by the Metallurgical Industries Corp., a national company responsible to the Ministry of Industries. In addition to the crude steel producers, there are a number of private sector rerollers who either buy their billets from the state-owned companies or import them.

Facility Overview

Egyptian Iron and Steel Co. at Helwan was constructed in the late 1950s with Soviet assistance and has an annual capacity of 1.2 million mt. The facility was modernized in the 1970s with the installation of two blast furnaces, three converters, three slab casters, three billet casters, and again, in 1991, with the addition of a fourth slab caster.[27] The hot-strip mill will be updated by adding automatic gauge control and a width adjustment control system. Delta Steel got its start in the steel industry by capitalizing on the abundant scrap left in the desert following World War II. Delta Steel is expanding its facilities. The installation of a new three-strand billet caster, the modernization of an EAF, and the addition of new hot-end equipment (including computer process control and a ladle furnace) have all helped to raise productivity at the facility. Delta Steel produces hot-rolled bars, rods, and sections; cold-drawn bars and wire; and welded wire mesh. It plans to replace the sections mill with a bar mill after 1995. National Metal Industries is modernizing its facilities by adding a vacuum arc refining unit that will improve steel quality and expand product range. The newest of the main Egyptian steel mills is the Alexandria National Iron and Steel Co., which began production in 1986. It plans to expand its 0.9 million-mtpy rebar and wire rod production by 50 percent with the help of the Japanese consortium led by NKK Corp., which helped to build and manage the original facility.[28]

The main development in the Egyptian steel industry is the addition of the Arab Specialty Steel Co. at Sadat City, which will be the first such Arab facility. Initial production of 100,000 mtpy of general engineering steels, welding electrodes, spring, bearing, high-tensile, and stainless steels could start by 1996. This production will increase to 140,000 mtpy by the end of the century. Special-quality steel consumption in Egypt and the other Arab States is estimated at 391,000 mtpy currently and is expected to rise by the year 2000.[29]

Trade

The most important product in the Egyptian iron and steel industry is rebar. Egypt consumes about 3 million mt of rebar each year, of which the domestic industry supplies only two-thirds, the rest being imported.[30] However, the soft construction market in Egypt, as in the rest of the world, has caused rebar consumption to decline. Steel imports fell from a high of 4 million mt in 1986, to about 300,000 mt in 1992.[31] As for exports, Egypt is trying to increase its exports in the near future by allocating a percentage of production solely for export. For example, the Alexandria National Iron and Steel Co. designates about 10 percent of its production for export.[32] Moreover, as stated previously, part of the new production of Arab Specialty Steel will be exported to other Arab countries.

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[21] IISI, *Steel Statistics of Developing Countries*, 1992 edition, Brussels, (Oct. 1992).
[22] UKISSB, *World Trade Steel*, 1991 and 1992.
[23] Mark Thompson, "Iranian Mills Look to Export Markets," *Metal Bulletin*, Apr. 16, 1992, p. 25.
[24] Ibid.
[25] Ibid.
[26] Ibid.
[27] "Middle East and Arab Steel- a Regional Profile," *Steel Times International*, May 1993, p. 40.
[28] "Egyptian Steelmaker Eyes Rebar, Rod Capacity Hike," *American Metal Market*, June 24, 1992, p. 3.
[29] "Middle East and Arab Steel- a Regional Profile," *Steel Times International*, May 1993, p. 40.
[30] Milton Nurse, "Egypt: Metals Last in Line for Privatization," *Metal Bulletin Monthly*, p. 37.
[31] IISI, *Steel Statistics of Developing Countries*, 1992; and UKISSB *World Trade Steel*, 1992.
[32] "Egyptian Steelmaker Eyes Rebar, Rod Capacity Hike," p. 3.

Saudi Arabia

In Saudi Arabia, the main steel producer is the DR-EAF, wire rod- and bar-maker, Al Jubail works at Hadeed, owned by SABIC and commissioned in 1982. The rest of the steel industry consists of the SABIC-owned Jeddah Rolling Mill, which produces reinforcing bars from billets produced at Hadeed, and a few private-sector companies. These include the wire products plant in the Jubail industrial area and the National Pipe Co. in Dhahran.

Facility Overview

At Hadeed, production exceeded nominal capacity. By 1990, steelmaking capacity reached 1.8 million mtpy.[33] Consequently, DRI production was increased to meet the new demand. Therefore, the entire steelmaking process was expanded, which raised total steel capacity to 2.2 million mtpy in 1992. The expansion included building a new 650,000-mtpy Midrex module for DRI production, expanding and modernizing the steelmaking shop, and installing a 0.5-million mtpy bar and light section mill. Production is forecast to reach 2.0 million mt in 1993, and the full 2.2 million mt in 1994.[34] Further expansion is being considered now to produce flat products by thin slab casting, which would require additional DR capacity.

Trade

In 1983, Saudi Arabia imported 96 percent of its iron and steel requirements[35]; in contrast, in 1993, the country has become a small-scale exporter of iron and steel products. During the 1980s, imports consistently fell as production rose. In 1983, Saudi imports totaled 4.6 million mt, then dropped by 83 percent by 1989, to a low of 774,000 mt, before rising again by 107 percent to 1.6 million mt in 1991 and 1992, because of the construction boom after the Gulf War.[36] Japan had the largest share of the Saudi import market in 1992 with 36 percent, followed by South Korea and Germany, with 20 percent and 10 percent, respectively.[37] Additionally, Saudi Arabia received 40 percent (33,000 metric tons) of the U.S. steel products exported to the Middle East region.[38] Saudi Arabia has not yet exported a significant share of its production. In 1991, Saudi Arabia exported 292,000 mt of steel products.[39] Like other countries in the Middle East, however, Saudi Arabia plans to increase exports to other Arab countries in the near future.

Qatar

The Qatari steel industry is comprised of a single facility, the Umm Said, DR-EAF-based, minimill of Qatar Steel Co. (QASCO) which was built in 1978, with an initial capacity of 526,000 mtpy. QASCO is 70 percent-owned by the Qatari Government, 20 percent by Kobe Steel, and 10 percent by Tokyo Boeki.

Facility Overview

Modifications to the rolling mill that allow simultaneous rolling of two billets into smaller size rebar have allowed recent production consistently to exceed nominal capacity, with output reaching 575,000 mt in 1992.[40] In the early years of operation, QASCO accumulated over $150 million in debt. Since 1988, however, the company has operated at a profit.[41] In 1992, it paid dividends to the shareholders for the first time. Expansion plans include increasing raw steel capacity at the original plant to 0.7 million mtpy and building a new 0.5-million-mtpy rebar facility at the same site. Bids have been received for building the new facility, but the uncertainty of electricity supplies keeps construction pending.

Trade

Qatar is the only Middle Eastern producer that has successfully exported a major portion of its steel production. During the last 10 years, Qatar's exports of concrete reinforcing bars have averaged 90 percent of total production.[42] Qatar's main markets are Iran and the Arab Gulf nations, where it maintains a 30-percent market share.[43] Recently, QASCO became the first Arab steel producer accredited with the Japanese Industrial Standard, which could lead to more export opportunities in Japan and other Far East countries.[44]

Other Countries

The Jordanian steel industry consists of three steel companies in the city of Zarqa: the Jordan Iron and

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[33] "Middle East and Arab Steel- a Regional Profile," *Steel Times International*, May 1993, p. 44.
[34] Ibid.
[35] U.S. Department of State telegram, "Economic and Commercial Report for February, 1992," message reference No. 02410, prepared by U.S. Embassy, Riyadh, Mar. 24, 1992.
[36] IISI, *Steel Statistics of Developing Countries*, 1992; and UKISSB, *World Trade Steel*, 1992.
[37] UKISSB, *World Trade Steel*, 1992.
[38] Ibid.
[39] IISI, *Steel Statistics of Developing Countries*, 1992.
[40] IISI.
[41] Mark Thompson, "Qasco Approves Major Capacity Expansion," *Metal Bulletin*, Apr. 27, 1992, p. 17.
[42] IISI, *Steel Statistics of Developing Countries*, 1992.
[43] Thompson, "Qasco," p. 17.
[44] Ibid.

Steel Industry Co. (JISCO), the National Steel Industry Co., and the Jordan Pipes Manufacturing Steel Industry Co. In Jordan, a recent agreement signed between the Arab Engineering and Industrial Co. and a Polish metallurgical organization will lead to building a new rebar rolling mill in the northern city of Irbid.[45]

Several newcomers to the steel industry are in the region. Syria plans to enter the steel industry with the construction of a 0.7-million mtpy long products, DR-EAF steel plant in Al-Zara. The United Arab Emirates (UAE) plans to build mills at Al-Goaz and either at Abu Dhabi or at Dubai. Finally, the Gulf Industrial Investment Co. is building two steel mills in Bahrain.

Outlook

Even with the expansion and modernization in progress or planned in the Middle East, the region will not reach its goal of self-sufficiency in steel products by the end of this decade. However, compared to the present situation where the Middle East produces only about one-half of its consumption, by the year 2000 the region could be producing the majority of its consumption. Forecasters predict that steel production in the Middle East could almost double by the year 2000, to about 14 million mt.[46] Consumption, however, is also expected to rise steadily, reaching 15 million mt because of reconstruction and industrial growth.

Industrial development in the Middle East has been slow because of the lack of foreign exchange reserves and the unstable investment climate. In order to attract private or foreign investment in the region, states need stable and realistic national economic policies, including privatization, infrastructure building, and free flow of information and data across national borders. Most Middle Eastern countries have adopted some though not all of these policies, but more pressing domestic social issues have hampered progress. Though self-sufficiency is distant, imports should decline as the regional production capacity grows. A rise of exports will benefit the regional steel industry by making more foreign exchange reserves available for new investments and by forcing better product quality and customer service which, in turn, will improve its international competitiveness.

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[45] Ibid., p. 44.

[46] Hindley, p. 3.

Stricter Environmental Regulations Require Innovative Responses by U.S. Steelmakers

The enactment of major environmental regulations enforcing stricter standards for air quality, water quality, and solid waste control has spurred the investment of billions of dollars of capital and imposed significant operating and maintenance costs on the U.S. steel industry. Notwithstanding past and current efforts to control emissions, as regulations at the national, State, and local levels become more stringent, future adjustments by the industry seem unavoidable. As incremental improvements to end-of-line (EOL) abatement technologies yield a decreasing return in pollutant reduction, steelmakers may find it necessary to change their production processes to comply with anticipated environmental requirements.

This report examines the U.S. steel industry's response to more stringent environmental regulations. First, an overview of regulations affecting the industry is presented. Next, a discussion of the types of technologies available to meet these regulations is provided, outlining the differences between EOL and production-process abatement. Finally, reasons for shifting from EOL to production-process abatement are discussed, along with available technologies and certain research and development (R&D) projects.

Environmental Regulations Affecting the Steel Industry[47]

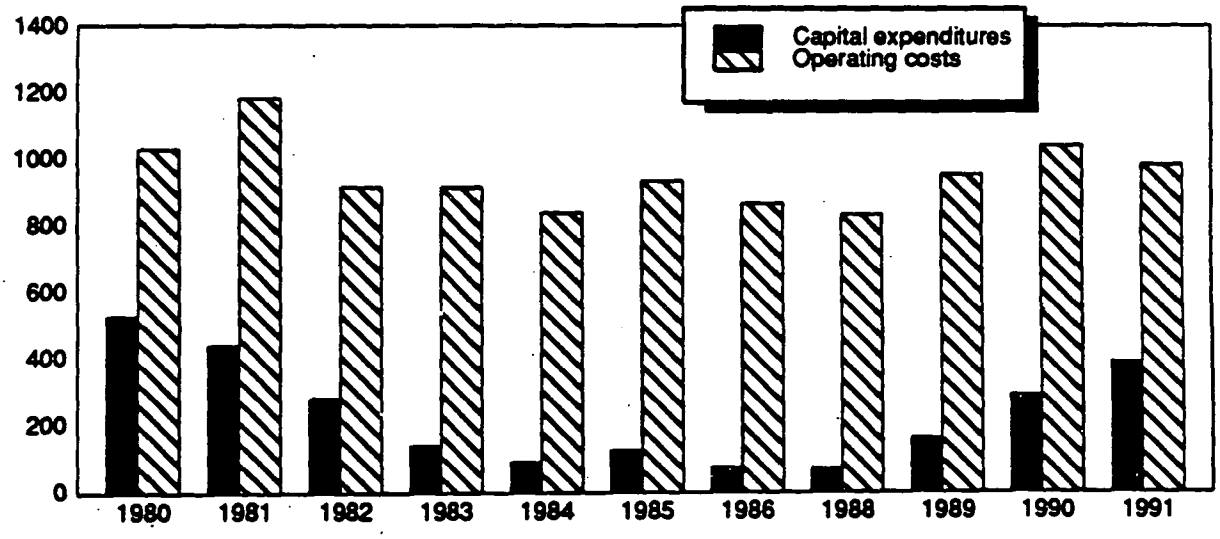
Over the past decade, environmental regulations have expanded to encompass practically every stage of the steelmaking process. The industry has been affected not only by regulations restricting its own practices, but by regulations covering steel end-uses and by public concern about environmental issues. Penalties for violations of environmental regulations have increased significantly and include criminal enforcement measures, encouraging compliance.

Environmental regulation has affected industry costs, investment, and operations (figure 6). Although

[47] For a comparative discussion of the burden imposed by environmental regulations on an international basis, see the environmental regulation section of U.S. International Trade Commission (USITC), *Steel Industry Annual Report on Competitive Conditions in the Steel Industry and Industry Efforts to Adjust and Modernize*, ch. 3, "The Competitive Environment, 1970-91," investigation No. 332-289, USITC publication 2436, Sept. 1991, pp. 3-25 to 3-33.

Figure 6
The U.S. steel industry: Pollution abatement operating costs and capital expenditures, 1980-91

Million dollars



Note.—Data not published for 1987.

Source: Derived by USITC staff from Bureau of the Census, U.S. Department of Commerce, *Pollution Abatement Costs and Expenditures, MA200*, various issues.

capital expenditures have fluctuated over the past decade, they have remained significant. Costs have risen due to increases in the administrative cost of complying with regulations and permits, and due to fines and litigation resulting from lack of compliance.[48] Steelmakers paid environmental fines and litigation costs that totaled almost $25 million in 1992.[49] The cost of operating and maintaining equipment associated primarily with environmental control is estimated to be between $10 and $20 per ton of steel shipped;[50] total pollution abatement operating costs were $981 million in 1991.[51] Compliance with regulations has required investment in pollution abatement equipment, without which facilities might not be able to comply with standards. Over the past two decades, the industry has invested approximately $6 billion in pollution control systems.[52] Environmental regulations that require modifications of steelmaking processes may also affect operating levels and practices.[53]

U.S. steel producers' expenditures on environmental control continued to account for a significant portion of total capital expenditures in 1991 and 1992. Environmental expenditures fell between 1991 and 1992, but accounted for about 12.4 and 11.1 percent, respectively, of total capital expenditures in each year. Environmental capital expenditures by carbon and certain alloy steel producers accounted for a higher percentage of total capital expenditures than those by stainless and alloy tool steel producers (11.3 percent versus 7.6 percent in 1992). Differences in raw steelmaking processes led to a disparity in operating expenditures among types of steelmakers; in general, specialty steelmakers rely on electric arc furnace (EAF) steelmaking. Expenditures for environmental control in 1992 were $635 million for carbon and certain alloy steel producers and $57 million for stainless and alloy tool steel producers.[54]

Air Quality

Steelmaking produces many air pollutants, including carbon monoxide, nitrogen oxides, sulfur dioxide, and particulates. Airborne pollutants from the coke,[55] iron, and steelmaking processes have been associated with health problems in surrounding populations. As a result, concerns about airborne emissions have dominated regulatory interest in the industry. The most important air quality legislation that affects the steel industry is the Clean Air Act and its 1990 amendments (CAAA). Provisions covering air toxics, permits, and enforcement will also significantly affect the industry.

Title III of the CAAA establishes a two-step process to regulate toxic air emissions. The essence of this process requires the Environmental Protection Agency (EPA) to develop a list of source categories for each of 189 chemicals, including coke oven emissions, and then develop technology-based standards. Second, EPA must assess the risk remaining after imposition of technology-based standards and propose standards to reduce unacceptable risk levels. Until these risk-based standards are known, the full cost of compliance with the CAAA will remain uncertain.[56]

Under the CAAA, coke oven emissions are targeted for early control. The remaining 188 air toxics listed in the amendments include compounds of chromium, nickel, manganese, cadmium, lead, and other heavy metals found in iron ore, steel scrap, and alloying materials. This comprehensive coverage, combined with the emission threshold that triggers permit requirements (10 tons per year for any listed air toxic or 25 tons per year for aggregate emissions), means that virtually all steel mills will be affected.[57]

As a result of the volume of air-quality regulations, expenditures to comply with these requirements have consistently dominated capital expenditures for pollution abatement (figure 7). Although expenditures in this category generally fell from 1981 through 1985, they have since grown at a rapid pace since 1986 (figure 8). Between 1988 and 1990, capital expenditures on air quality increased by more than 300 percent, rising another 95 percent in 1991, to $323.2 million. Operating costs for air-quality control were $404.4 million in 1991.

Water Quality

The steel industry is a major water user; production of a ton of steel requires an estimated 75,000 gallons of water.[58] Although much of this water is recycled in

[48] Ibid., pp. 3-24 to 3-25.
[49] USITC, *Steel Semiannual Monitoring Report*, investigation No. 332-327, USITC publication 2655, June 1993, pp. 42-44.
[50] Bruce A. Steiner, Vice President, Environment and Energy, American Iron and Steel Institute (AISI), "Environmental Issues Facing the Iron and Steel Industry," undated.
[51] U.S. Bureau of the Census, *Pollution Abatement Costs and Expenditures, 1991 MA200(91)-1*, issued Jan. 1993.
[52] Steiner, "Environmental Issues."
[53] USITC, *Steel Industry Annual Report*, p. 3-25.
[54] USITC, *Steel Semiannual Monitoring Report*, pp. 42-44.
[55] The Commission is currently examining the effects of environmental regulations on coke producers and consumers in greater detail in a forthcoming study, *Metallurgical Coke: Baseline Analysis of the U.S. Industry and Imports*, which will be released in Spring 1994.
[56] Proposed National Emission Standards for Hazardous Air Pollutants for Source Categories; Coke Oven Batteries, 57 *F.R.* 57534, Dec. 4, 1992.
[57] Robert R. Geddis, Air Permit Specialist, Lockwood Greene, USITC staff interview, Aug. 12, 1993.
[58] AISI, Written statement for hearing record, Subcommittee on Environmental Protection, U.S. Senate Committee on Environment and Public Works, on Clean Water Legislation, Aug. 15, 1991.

the steelmaking process, the industry is likely to be substantially affected by the higher threshold for water-quality standards at the Federal, State, and regional levels. The federal Clean Water Act imposes stringent requirements on the industry that are magnified by State regulations, which either equal or exceed those at the Federal level. Local concerns about water quality often make State requirements more restrictive than those at the national level.[59]

State concerns about water pollutants have encouraged current efforts to develop uniform water-quality standards in the Great Lakes States, which contain about 80 percent of U.S. integrated steelmaking capacity. State efforts to achieve higher water quality in all bodies of water in the Great Lakes basin may lead to increased operating costs, restrictions on increases in capacity, and zero discharge requirements.[60] Such requirements may raise production costs, affecting the ability of firms to compete in already narrow-margin product lines in both U.S. and foreign markets.

The share of capital expenditures for pollution abatement related to water quality has varied throughout the decade, peaking in 1983 at 55.7 percent of total expenditures, but accounting for only 14.9 percent in 1991. Total expenditures on water quality fluctuated between 1980 and 1991, in general falling between 1980 and 1988, rising through 1990, and falling in 1991 (figure 9). Capital expenditures and operating costs for water quality control in 1991 were $57.7 million and $329.0 million, respectively.[61]

Solid-Waste Control

Under the Resource Conservation and Reclamation Act (RCRA), the steel industry will continue to face many regulatory and legislative initiatives concerning control of solid and hazardous waste. RCRA is up for reauthorization, and issues of interest to the steel industry include processing and recycling of secondary materials, packaging restrictions, interstate waste transport, toxic use reduction, and environmental taxes.[62]

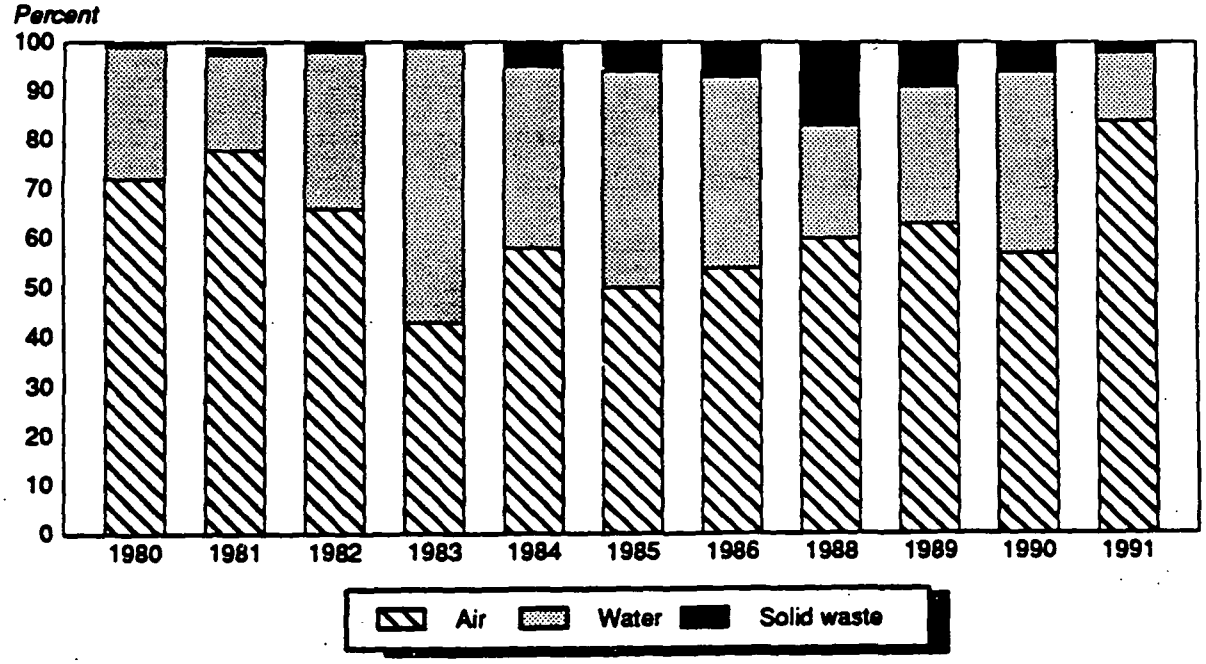
[59] Gary R. Allie, Environmental Regulations Manager, Environmental, Health, & Safety, Inland Steel Flat Products, USITC staff interview, Aug. 20, 1993.

[60] Steiner, *Environmental Issues Facing the Iron and Steel Industry*, presented at the *Iron Age*, "Metals and the Environment" conference, Washington, DC, Jan. 27, 1993.

[61] U.S. Bureau of the Census, *MA200*.

[62] Steiner, *Environmental Issues*.

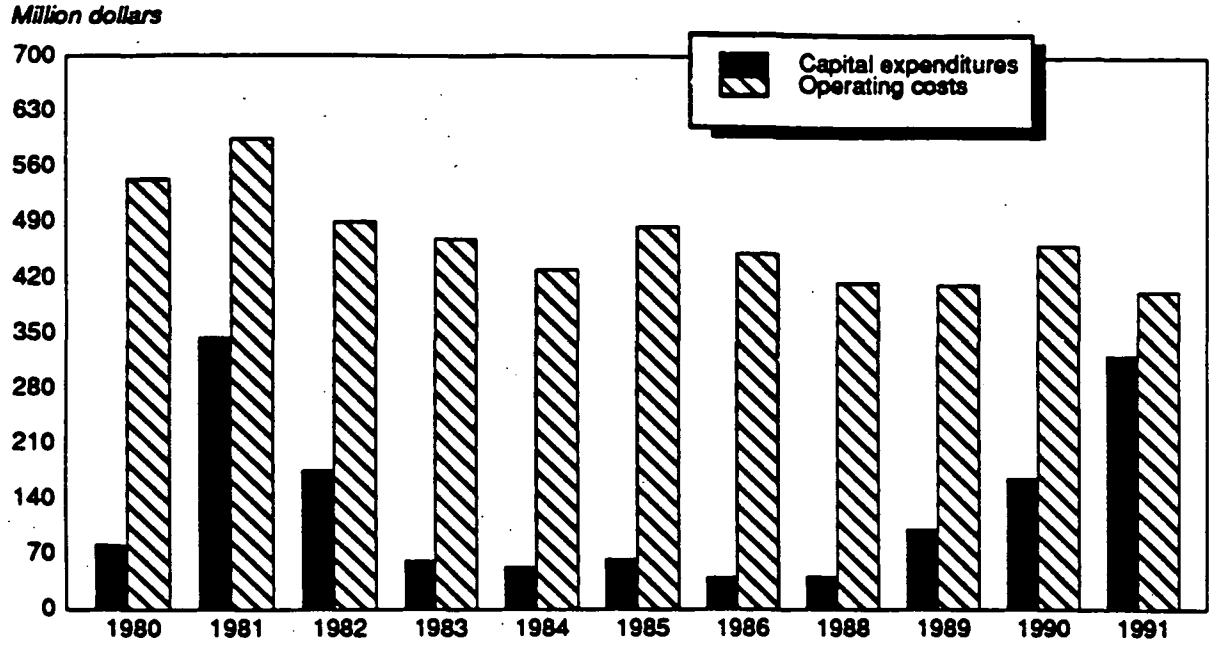
Figure 7
The U.S. steel industry: Share of pollution abatement capital expenditures, by types of pollutant, 1980-91



Note.—Data not published for 1987.

Source: Derived by USITC staff from Bureau of the Census, U.S. Department of Commerce, *Pollution Abatement Costs and Expenditures, MA200*, various issues.

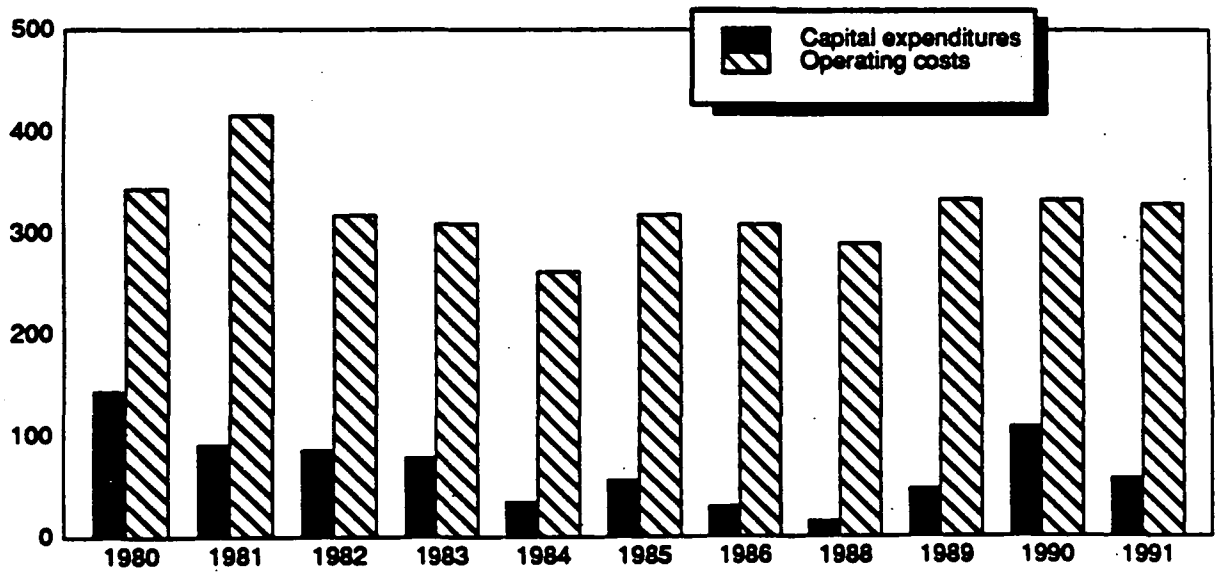
Figure 8
Air-quality control: Pollution abatement capital expenditures and operating costs, 1980-91



Note.—Data not published for 1987.

Source: Derived by USITC staff from Bureau of the Census, U.S. Department of Commerce, *Pollution Abatement Costs and Expenditures, MA200*, various issues.

Figure 9
Water-quality control: Pollution abatement capital expenditures and operating costs, 1980-91



Note.—Data not published for 1987.

Source: Derived by USITC staff from Bureau of the Census, U.S. Department of Commerce, *Pollution Abatement Costs and Expenditures, MA200*, various issues.

The share of pollution abatement capital expenditures related to solid and hazardous waste control technology, including treatment of EAF dust, has remained small over the decade, accounting for only 1.4 percent in 1991. The low level of spending in this category largely reflects the relative concentration of regulators on other types of waste. Total expenditures on solid-waste control rose in general between 1980 and 1990, before falling in 1991 to $5.6 million (figure 10). Operating costs for solid-waste control were $228.9 million in 1991.[63]

Pollution Abatement Technology

To satisfy existing or proposed regulations, the U.S. steel industry has adopted a variety of pollution abatement technologies, classified generally either as end-of-line (EOL) or production-process technologies. EOL abatement captures and treats pollutants produced during the steelmaking process, using technology such as smoke-stack scrubbers, baghouses, water treatment facilities, and landfills. In contrast, production-process abatement reduces the generation of pollutants by increasing efficiency, improving raw material management, or increasing internal recycling.

The U.S. steel industry has traditionally relied upon EOL technologies for most pollutant treatment, as shown by capital expenditures for air and water control[64] between 1980 and 1991 (figure 11). EOL technologies have become increasingly sophisticated, and include biological treatment of wastewater,[65] advanced fume and baghouse systems to capture airborne toxins,[66] and treatment of hazardous EAF dust.[67] Despite these advances, current and past use of EOL technologies mean that most new equipment offers only incremental improvements over existing technologies.

As environmental restrictions tighten, and as U.S. steelmakers must monitor a growing list of toxins, such

[63] U.S. Bureau of the Census, *MA200*.

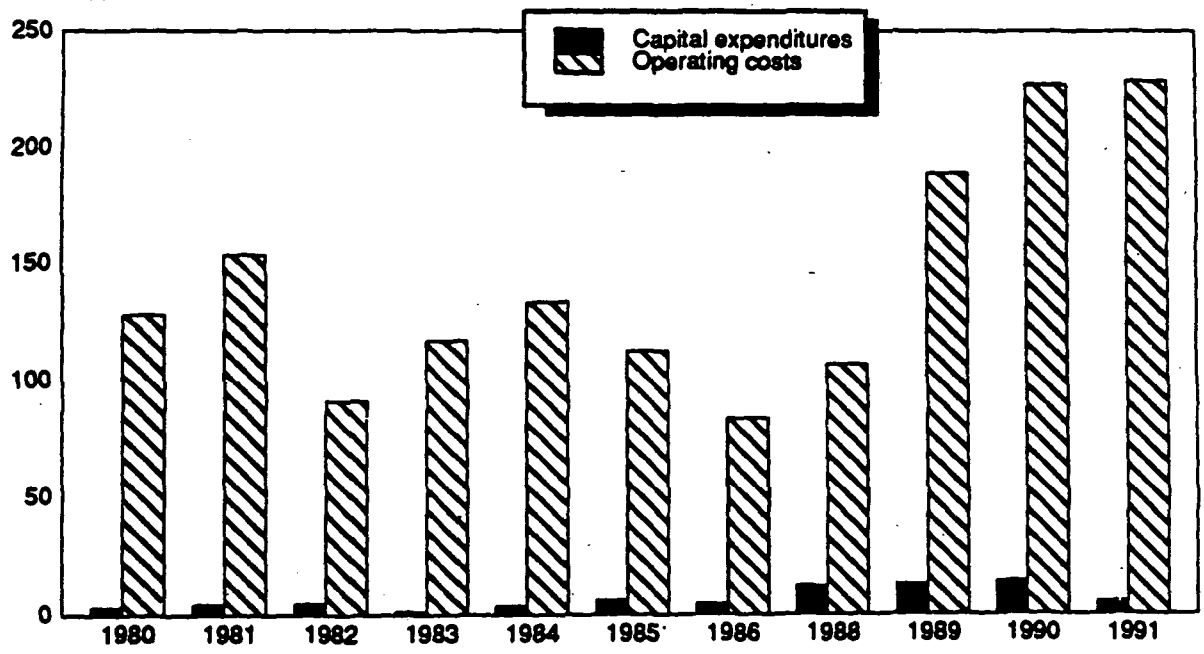
[64] Data not collected for solid waste.

[65] K.C. Shaw, Senior Environmental Engineer, Geneva Steel, Provo, UT, "Biological Treatment of Full-Strength Coke Plant Wastewater at Geneva Steel," *Iron and Steel Engineer*, Aug. 1993, pp. 29-32.

[66] Lead and bismuth system installed by Inland Steel Bar Company, East Chicago, IN.

[67] Lester Gress, Principal Environmental Engineer, Cleveland Fluid Systems Co., Cleveland, OH, and Alan Sarko, Director-Marketing, Inorganic Recycling Co., Columbus, OH, "Recycling Vitrification Process for Electric Arc Furnace Dust," *Iron and Steel Engineer*, Aug. 1993, pp. 38-40.

Figure 10
Solid-waste control: Pollution abatement capital expenditures and operating costs, 1980-91



Note.—Data not published for 1987.

Source: Derived by USITC staff from Bureau of the Census, U.S. Department of Commerce, *Pollution Abatement Costs and Expenditures, MA200*, various issues.

Figure 11
The U.S. steel industry: Share of pollution abatement capital expenditures on air and water control, by technology, 1980-91

Note.—Data not published for 1987.

Source: Derived by USITC staff from Bureau of the Census, U.S. Department of Commerce, *Pollution Abatement Costs and Expenditures*, various issues.

incremental improvements may no longer be sufficient to meet these requirements. To achieve additional gains, it seems likely that the industry will have to increasingly adopt changes in production processes.[68]

Capital expenditures on such technologies by the steel industry are proportionately less than those of other major industries that environmental regulations affect, such as chemicals, petroleum and coal, and paper. Spending on production-process technologies for air- and water-pollution control in the latter industries accounted for 26, 39, and 46 percent, respectively, of total capital expenditures for pollution abatement in 1991, compared with only 19 percent in the steel industry. Spending by the steel industry has increased in recent years, rising 7.3 percentage points between 1990 and 1991, indicating that steelmakers have begun to adopt more production-process controls.[69]

[68] Steiner interview, Aug. 23, 1993.

[69] U.S. Bureau of the Census, *MA200(91)-1*. Census data probably understate capital expenditures on production-process abatement technologies for both the steel industry and others. Producers reported difficulty in estimating the incremental cost of differences between

Available Technologies

A significant proportion of currently available production-process technologies target pollutant reduction through the partial or complete elimination of cokemaking from the steelmaking process. Some technologies are designed to improve blast furnace efficiency by substitution of other fuels for coke, such as the supplemental fuel injection of fuel oil, natural

[23]-*Continued*
actual expenditures on new plant and equipment and the cost of comparable plant and equipment without pollution abatement features. For a more detailed discussion of the data, see "Methodology" and "Limitations of the Data," in *MA200(91)-1*.

In addition, because production-process technologies may improve environmental results by increasing the efficiency of production performance, many technologies that are not traditionally viewed as "green" may offer beneficial environmental externalities but may not be reported as environmental related expenditures. Nontraditional environmental technologies include improved reheat furnaces, which reduce energy use, and ladle metallurgy stations, which increase quality control, reducing waste.

gas, tar, or pitch, or pulverized coal injection.[70] Other technologies bypass the cokemaking process and blast furnace entirely and use direct reduced iron, Corex,[71] or iron carbide.[72] Existing U.S. and foreign capacity utilizing these technologies is currently being supplemented by new plants.

Still other technologies reduce pollutants at the source by using scrap management[73] and using cleaner coal. Elaborate recycling programs reuse wastewater and sludges, while EAFs recycle steel scrap.[74] Continuous casters and ladle refining stations promote efficiency, decrease waste, and reduce air emissions.

Research and Development Projects

Although relatively sophisticated production-process technology is already available, current methods may not be sufficient to meet future environmental requirements. Industry concern has resulted in several research and development projects. Much of the funding for R&D in the steel industry comes from the U.S. Department of Energy (DOE) under research authorization from various legislation, particularly the 1988 Steel and Aluminum Energy Conservation and Technology Competitiveness Act, better known as the "metals initiative." Under this legislation, DOE encourages cooperative R&D agreements between itself and cost-sharing partners, often coordinated by the American Iron and Steel Institute (AISI).

Currently, AISI sponsors a number of projects with major pollution prevention components. Most projects involve development of processes to reduce waste toxicity and volume. Others seek to improve operating efficiency, indirectly reducing both energy consumption and generation of process waste. AISI is also engaged in efforts to develop technologies to recycle wastes generated by steel manufacturing. AISI-sponsored projects include:[75]

- Direct steelmaking: designed to develop one continuous process to go from iron ore pellets to liquid steel without the use of coke;
- Tin projects: developing more environmentally benign processes for tin and chrome plating and the reduction of lead in tin coatings;
- De-zincing of scrap; and
- Sludge dewatering and deoiling.

Although R&D projects look promising, the installation of commercial capacity using new technology will take time. For example, AISI estimates that it will be 4 to 5 years before the first commercial direct steelmaking unit is built and an additional 15 to 20 years before significant capacity can be installed by the industry.[76] Moreover, the adoption of new technologies may be hindered by the capital intensiveness of the industry. The steel industry has billions of dollars of investment in capital equipment that retains a considerable lifespan. Although certain mills will probably need immediate investment in pollution abatement technology to meet environmental regulations, for most, the adoption of production-process technology is likely to be more gradual. Less polluting technology will replace obsolete capital equipment, similar to the phaseout of open hearth furnaces and their replacement with basic oxygen furnaces.[77] In addition, provisions under the CAAA and similar provisions under other regulations, mean that modernization will be subject to strict oversight by environmental agencies.[78] New equipment, whether installed in greenfield or existing facilities, must meet stricter regulations than existing sources of pollutants.

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[70] George E. Kuebler, "Coke Concerns Fuel Interest in PCI," *33 Metal Producing*, Apr. 1993, p. 18.

[71] George J. McManus, "Ironmaking Processes Win Renewed Interest," *Iron Age*, Jan. 1993, p. 48.

[72] Jo Isenberg-O'Loughlin, "Ready or Not, the Race is On!," 33 *Metal Producing*, Apr. 1993, pp. 21-22, 50.

[73] Maureen McKenna, "Scrap: Managing to be Environmentally Correct," *Iron Age*, Mar. 1993, pp. 14-16.

[74] EAFs do create the environmental problem of EAF dust, however, which must be treated or landfilled.

[75] Allie, "Pollution Prevention Activities by the American Iron and Steel Institute," presented to the Steel Pollution Prevention Work Group, Aug. 23, 1993.

[76] AISI, *The Steel Industry and Global Climate Change*, factsheet, May 19, 1992.

[77] Allie interview, Aug. 20, 1993.

[78] Geddis, USITC staff interview, Aug. 12, 1993.

USITC Determinations on Flat-Rolled Steel Trade

On August 9, 1993, the United States International Trade Commission (USITC) made final injury determinations on antidumping and countervailing duty investigations involving flat-rolled steel products imported into the United States from 20 countries: Argentina, Australia, Austria, Belgium, Brazil, Canada, Finland, France, Germany, Italy, Japan, Korea, Mexico, Netherlands, New Zealand, Poland, Romania, Spain, Sweden, and the United Kingdom. Overall, the Commission found that there were five product groups and analyzed them separately: hot-rolled products, cold-rolled products, corrosion-resistant products other than clad plate, cut-to-length plate, and corrosion-resistant clad plate.

The Commission determined that there was no material injury or threat of material injury from the imported hot-rolled products or clad plate products and no current material injury from imports of cold-rolled products. However, cold-rolled imports from Germany, Korea, and the Netherlands were found to constitute a threat of material injury to the U.S. industry. Corrosion-resistant products from Australia, Canada, France, Germany, Japan, and Korea were determined to be a source of material injury; and cut-to-length plate imports from Belgium, Brazil, Canada, Finland, Germany, Mexico, Poland, Romania, Spain, Sweden, and the United Kingdom were also found to cause material injury. The affirmative determinations accounted for none of the hot-rolled or clad plate imports, 37 percent of the cold-rolled, 92 percent of the corrosion-resistant, and 97 percent of the cut-to-length plate imports. None of the flat-rolled products from Argentina, Austria, Italy, or New Zealand was found to cause either material injury or a threat of material injury.

The USITC analyzed a great many issues including the conditions of competition, fungibility of imported and domestic products, import volumes and trends, domestic industry profitability, whether imports should be considered separately or collectively, and the production capacities of foreign producers. The Commission collected data for each industry reflecting both total consumption and captive or open market consumption. While the Commission noted that the extent of captive consumption is relevant and important as a condition of competition in the domestic industries under consideration, it stated that the impact of the subsidized or dumped imports must be evaluated in relation to total U.S. production of a like product. The following tabulation shows 1992 data gathered during the investigations:

Those imports where material injury or threat of material injury was found are subject to antidumping and/or countervailing duties in addition to regular import duties on the products involved. Although these investigations are concluded, parties on both sides of the disputes have announced their intention to appeal the decisions to the Court of International Trade. The petitioners have also indicated that they may refile some or all of the cases.

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202-205-3431

Product	Subject imports		Subject imports' market share[1] Total consumption	Open market
	(1,000 tons)	($ million)	(Percent)	
Hot-rolled	3,034	1,021	6.0	15.7
Cold-rolled	1,819	884	6.4	12.7
Corrosion-resistant[2]	2,113	1,308	15.7	16.0
Plate	633	228	11.7	12.9

[1] Calculated on a tonnage basis.
[2] Including corrosion-resistant clad plate.

Labor Settlements

Potential strikes at three major integrated steel producers were averted when members of the United Steelworkers of America (USWA) ratified a labor agreement at Inland Steel and reached tentative settlements at Bethlehem Steel Corp. and National Steel Corp. Workers at Inland ratified a 6-year collective bargaining agreement in July 1993 that, among other things, gives the USWA a representative on the company board of directors. This agreement reportedly is a breakthrough in labor relations by involving union members in the full corporate decision-making process.[79] At the plant level, union input will be mandated for all types of corporate decisions, especially those involving new technology. At the department level, joint meetings of elected union representatives and department managers will occur.[80] Other highlights of the agreement include job security for production workers in exchange for work practice changes and a no-strike clause, a $1,000 bonus this year for workers who sign the agreement, a 50-cent-per-hour increase in August 1995, and profit sharing. Health care benefits will remain intact, but Inland will switch to a managed health-care system administered jointly by the union and the company.[81]

The labor settlements reached with Bethlehem Steel and National Steel, both 6-year pacts ratified in late August 1993, replace the agreements with those companies that expired on July 31, 1993. The Bethlehem contract gives the USWA representation on the company board of directors and calls for at least one wage increase, employment security provisions, and the retention of current health-care insurance.[82] The provisions of the National Steel labor contract are reportedly similar to those of the Bethlehem agreement.

The settlements reached with Inland, Bethlehem, and National all meet the "New Directions" bargaining goals adopted by the USWA's Basic Steel Industry Conference (BSIC) in January 1993. Top BSIC priorities were employment security, worker empowerment, wage and benefit increases, and training.[83]

The 4-year labor pact between Armco Steel Co. (Ashland, KY works) and the USWA, scheduled to expire on July 31, 1993, has been extended indefinitely. Talks resumed August 12, 1993, although no agreement has been reached to date. At Geneva Steel, the West's only integrated steelmaker, management and the USWA reached a tentative agreement on a new 18-month labor contract that replaced the pact that expired August 31, 1993. Reportedly, the agreement is consistent with the Geneva modernization goals and the USWA economic goals for its members.[84]

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202-205-3434

U.S. Steelmakers and the 1993 Flood

U.S. steelmakers emerged largely unscathed from the "Great Flood" of 1993. Only the midwestern division of Armco Inc. (Kansas City, MO) was forced to shut down. Flooding in its pump house halted all melting and rolling operations for less than a full week in late July. Laclede Steel (Alton, IL) was able to keep up operations after the Mississippi River engulfed the town water plant, although workers were subject to some inconveniences.

Although most mills were spared flooding, barge, rail, and truck transport of steel products was hampered for many mills in the Midwest. Securing alternative transport and routes imposed delays and higher costs on many steelmakers. As a result, costly delays of up to 4 weeks occurred in both the shipment of raw materials to the steel mills and shipments of steel products to consumers during July and August. Delays may continue because of infrastructure damages caused by the flood. According to the Association of American Railroads, flooding caused more than $205 million in damage to railroad tracks and bridges in the Midwest.[85]

The massive flood damage is not expected to translate into new orders for U.S. steelmakers. In fact, steelmakers may lose orders as rail companies divert money from new orders to repairs. In addition, flood damage to crop land may mean that farmers will not have the resources to buy new agricultural equipment. Such fiscal restraints may mean a slowdown through next year for equipment manufacturers and their steel suppliers.

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202-205-3430

[79] United Steelworkers of America, *Steelabor*, Pittsburgh, PA, May/June 1993.
[80] Ibid.
[81] "USW Ratifies Inland Pact," *American Metal Market*, July 23, 1993.
[82] "Workers Ratify New Bethlehem Pact," *American Metal Market*, Sept. 1, 1993; and "Labor Claims Settlements Achieved Union's Targets," *American Metal Market*, Aug. 3, 1993.
[83] United Steelworkers of America, *Steelabor*, May/June 1993.
[84] "Geneva, USW Reach Accord," *American Metal Market*, Sept. 1, 1993.
[85] "Big Flood Inundation of Railroads Not Likely to Boost Sales of Steel," *American Metal Market*, Aug. 6, 1993, p. 13.

Table 3
Steel: U.S. raw steel production, capacity utilization, continuous cast steel, employment, wages, shipments, imports, exports, apparent consumption, net sales, net income, 1990-92, Jan.-June 1992, and Jan.-June 1993

				Jan.-June	
	1990	1991	1992	1992	1993
Raw steel:					
Production (*1,000 short tons*)	98,906	87,896	91,601	46,658	47,828
Capacity utilization (*percent*)	84.7	74.7	81.0	82.9	87.4
Continuously cast (*percent*)	67.4	75.8	82.2	77.0	85.0
Employment:					
Total (*1,000*)[1]	276.2	262.7	250.1	252.7	[2]239.5
Production workers (*1,000*)[1]	211.9	199.6	188.7	190.3	[2]182.4
Hourly employment cost[3] (*dollars*)	25.62	27.64	29.57	29.29	31.63
Steel:					
Shipments (*1,000 short tons*)	84,910	78,842	82,354	41,347	44,323
Imports (*1,000 short tons*)	18,144	16,381	17,781	8,798	8,610
Exports (*1,000 short tons*)	4,840	6,711	4,546	2,403	2,259
Apparent consumption (*1,000 short tons*)	98,214	88,512	95,589	47,742	50,674
Ratio of imports to consumption (*percent*)	18.5	18.5	18.6	18.4	17.0
Export-shipment ratio (*percent*)	5.7	8.5	5.5	5.8	5.1
Steel financial operations:					
Net steel sales (*million dollars*)	30,938	27,447	26,900	13,555	14,645
Net steel income[4] (*million dollars*)	54	(2,072)	(3,838)	(220)	(6,419)
Ratio of income to net sales (*percent*)	0.2	(7.5)	(14.3)	(1.6)	(43.8)

[1] These figures represent employment in Standard Industrial Code (SIC) 331. See appendix A for further information on employment data coverage.
[2] Preliminary.
[3] Total employment costs (including benefits) of employees receiving wages.
[4] First half 1992 and 1993 data represent operating, not net, income. Figures are for reporting companies only, which accounted for about 66 percent of the industry's total raw steel production in 1992.

Source: Compiled from data of the American Iron & Steel Institute (AISI) and official statistics of the U.S. Department of Commerce and the U.S. Department of Labor (Bureau of Labor Statistics).

Figure 12
U.S. average annual and monthly steel shipments, 1988-92, Jan.-June 1993

1,000 short tons

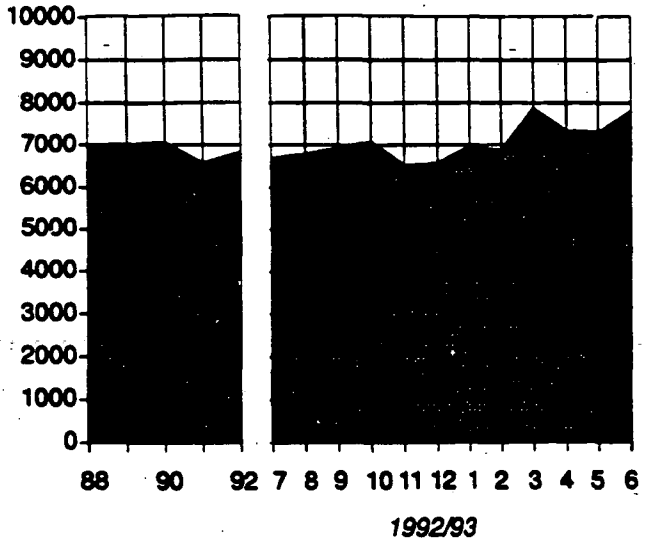


Figure 13
U.S. average annual and monthly steel imports, 1988-92, Jan.-June 1993

1,000 short tons

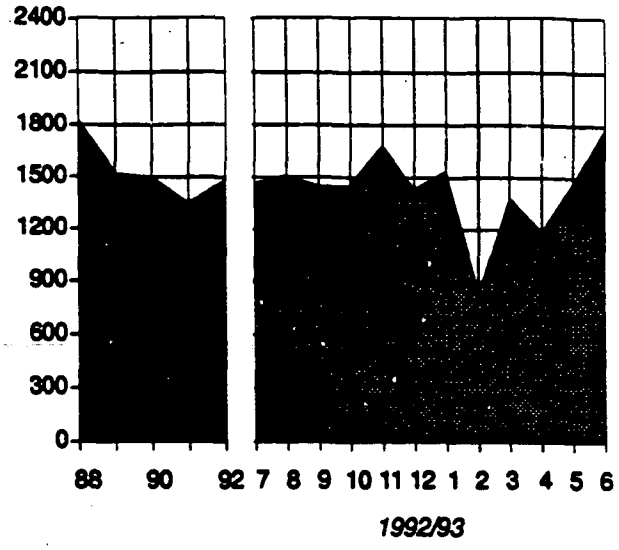


Figure 14
U.S. average annual and monthly steel exports, 1988-92, Jan.-June 1993

1,000 short tons

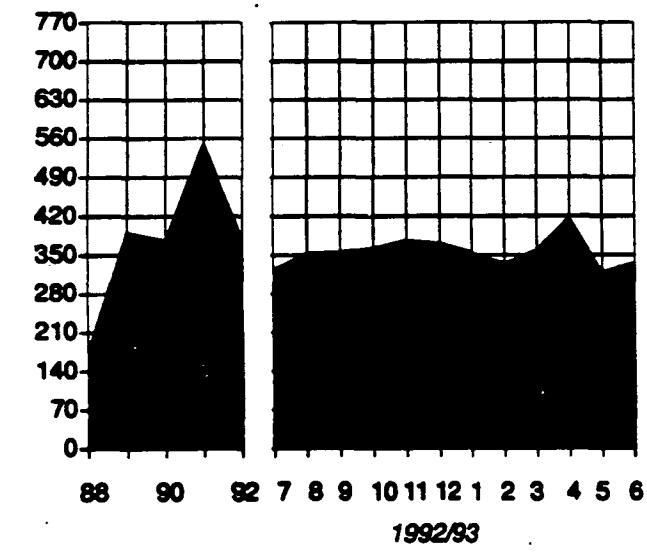
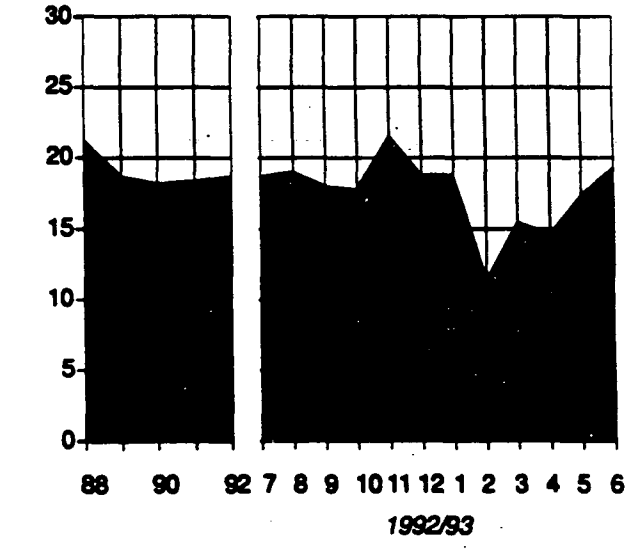


Figure 15
U.S. average annual and monthly steel import penetration,[1] 1988-92, Jan.-June 1993

Percent



[1] Import penetration is defined as the percent of apparent consumption represented by imports.

Source: Compiled from data of the AISI and official statistics of the U.S. Department of Commerce.

Figure 16
Raw steel: Geographic distribution of world production, 1992

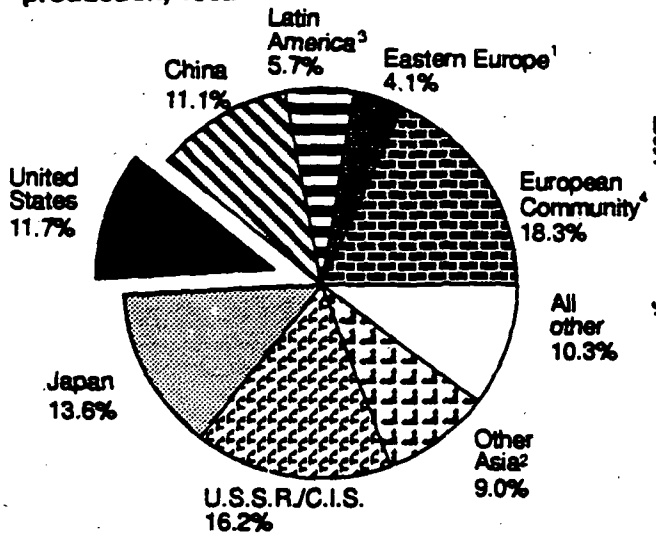
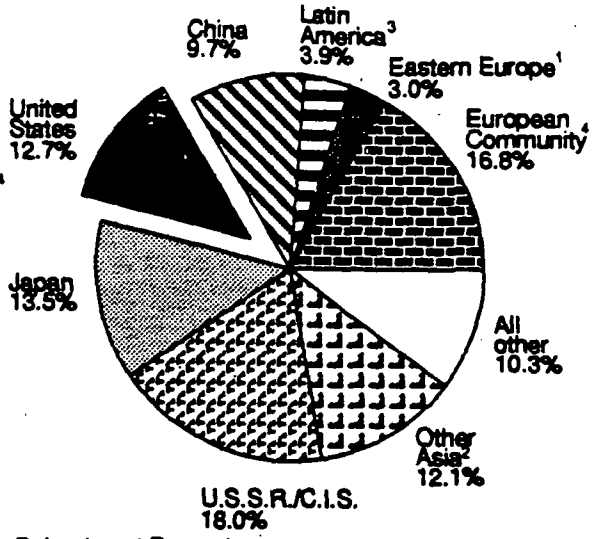


Figure 17
Raw steel: Geographic distribution of world apparent consumption, 1991[5]



[1] Includes Albania, Bulgaria, Czechoslovakia, Hungary, Poland, and Romania.
[2] All Asian countries excluding Japan, China, North Korea, and the Middle East region.
[3] Includes Mexico, Central America, South America and the Caribbean (including Cuba).
[4] Includes former German Democratic Republic.
[5] Data for 1991 are the most recent data available.

Source: International Iron and Steel Institute.

Table 4
Raw steel: Production of top 20 steelmakers, 1982 and 1992

Company	Country	1982	1992	Volume change 1982-92	Percent change 1982-92
		Million metric tons			
Nippon Steel	Japan	28.3	25.1	(3.2)	(11.3)
Usinor Sacilor	France	[1]17.7	21.1	3.4	19.2
Posco	South Korea	8.8	20.0	11.2	127.3
British Steel	United Kingdom	11.4	12.4	1.0	8.8
NKK	Japan	12.0	10.9	(1.1)	(9.2)
ILVA	Italy	[2]13.3	10.6	(2.7)	(20.3)
Thyssen	Germany	10.1	10.1	–	–
Kawasaki	Japan	10.9	10.0	(0.9)	(8.3)
Sumitomo	Japan	10.9	10.0	(0.9)	(8.3)
SAIL	India	6.7	9.7	3.0	44.8
Bethlehem	United States	9.5	9.6	0.1	1.1
USS	United States	11.0	9.5	(1.5)	(13.6)
Iscor	South Africa	6.4	7.7	1.3	20.3
LTV Steel	United States	[3]10.5	7.5	(3.0)	(28.6)
BHP	Australia	6.3	6.7	0.4	6.3
China Steel	Taiwan	([4])	6.2	([4])	([4])
Kobe Steel	Japan	6.4	5.8	(0.6)	(9.4)
National Steel	United States	5.0	4.9	(0.1)	(2.0)
Hoogovens	Netherlands	4.1	4.8	0.7	17.1
CSN	Brazil	([4])	4.4	([4])	([4])

[1] Represents combined production of Usinor and Sacilor, which merged to form Usinor-Sacilor in 1987.
[2] Represents production of FINSIDER, many of whose facilities were taken over by ILVA in early 1989.
[3] Represents combined production of Jones & Laughlin Steel and Republic Steel, which merged to form LTV Steel in 1984.
[4] Not available.

Source: Metal Bulletin.

Table 5
Raw steel: Average annual production, by specified countries/regions, by specified 5-year periods, 1958-92

Period	United States	European Community-12	Japan	Principal steel-producing developing countries[1]	World total
	Million metric tons				
1958-62	86.06	92.37	21.34	18.98	326.88
1963-67	114.15	113.08	44.48	24.49	448.70
1968-72	119.37	141.04	85.57	36.46	581.43
1973-77	120.93	150.66	109.71	51.73	678.46
1978-82	105.27	141.27	105.30	81.13	706.35
1983-87	79.14	129.09	100.97	110.53	708.33
1988-92	86.42	136.81	120.55	154.99	757.61
	Percent of world				
1958-62	26.33	28.26	6.53	5.81	100.00
1963-67	25.44	25.20	9.91	5.46	100.00
1968-72	20.53	24.26	14.72	6.27	100.00
1973-77	17.82	22.21	16.17	7.62	100.00
1978-82	14.90	20.00	14.91	11.49	100.00
1983-87	11.17	18.23	14.25	15.60	100.00
1988-92	11.41	18.06	15.91	20.46	100.00

[1] Includes Brazil, People's Republic of China, India, Republic of Korea, Mexico, and Taiwan.

Source: United Kingdom Iron and Steel Statistics Bureau and International Iron and Steel Institute.

Table 6
Raw steel: Production, by specified countries/regions, 1987-92

Country/region	1987	1988	1989	1990	1991	1992	Percent Change 1987-92
	1,000 metric tons						
Taiwan	5,771	8,288	9,047	9,747	10,973	10,705	85.5
Korea	16,782	19,118	21,873	23,125	26,002	28,054	67.2
Turkey	7,044	7,962	7,799	9,322	9,336	10,254	45.6
China	56,280	59,430	61,590	66,349	70,436	80,037	42.2
India	13,121	14,309	14,608	14,963	17,100	18,117	38.1
Australia	6,100	6,387	6,735	6,676	6,141	6,877	12.7
Mexico	7,642	7,779	7,851	8,726	7,883	8,436	10.4
Brazil	22,228	24,657	25,055	20,567	22,617	23,895	7.5
EC-12	126,537	137,829	140,142	136,758	137,449	132,279	4.5
United States	80,877	90,650	88,834	89,723	79,738	84,322	4.3
Japan	98,513	105,681	107,909	110,339	109,649	98,132	(0.4)
Canada	14,737	14,866	15,458	12,281	12,987	13,933	(5.5)
Czechoslovakia	15,416	15,379	15,466	14,677	12,071	11,140	(27.7)
USSR/CIS	161,874	163,037	160,096	154,414	132,839	116,827	(27.8)
Poland	17,145	16,873	15,094	13,625	10,439	9,785	(42.9)
Total selected countries/regions	650,067	692,265	697,557	691,492	665,660	652,793	0.4
All other	86,394	87,832	88,641	78,588	69,597	68,470	(20.7)
World total	736,461	780,097	786,198	770,080	735,257	721,263	(2.1)

Source: Compiled from statistics of the International Iron and Steel Institute.

Table 7
Steel mill products: Average annual exports, by countries/regions of origin, by specified periods, 1972-91[1]

Period	United States	European Community-12[2]	Japan	Principal steel-producing developing countries[3]	Other	World
	1,000 metric tons					
1972-76	3,432	55,821	28,577	2,325	27,224	117,377
1977-81	2,660	63,995	30,613	5,987	34,972	138,227
1982-86	1,083	64,902	30,336	14,221	43,508	154,050
1987-91	3,345	71,308	20,562	21,143	50,369	166,728
	Percent of world exports					
1972-76	2.9	47.6	24.3	2.0	23.2	100.0
1977-81	1.9	46.3	22.1	4.3	25.3	100.0
1982-86	0.7	42.1	19.7	9.2	28.2	100.0
1987-91	2.0	42.8	12.3	12.7	30.2	100.0
	Percent of shipments[4]					
1972-76	3.8	46.6	31.8	6.5	(5)	22.5
1977-81	3.2	54.6	32.7	10.2	16.3	24.3
1982-86	1.8	60.4	32.4	17.5	19.0	26.9
1987-91	4.5	57.9	20.5	17.3	20.2	24.9

[1] Data for 1991 are the most recent data available.
[2] Includes all 12 countries for all years.
[3] Includes Brazil, China, India, Korea, Mexico, and Taiwan.
[4] Derived by staff of the U.S. International Trade Commission.
[5] Not available.

Source: Calculated from statistics of the International Iron and Steel Institute and the United Kingdom Iron and Steel Statistics Bureau, except as noted.

Table 8
Steel mill products: Average annual imports, by countries/regions of origin, by specified periods, 1972-91[1]

Period	United States	European Community-12[2]	Japan	Principal steel-producing developing countries[3]	Other	World
			1,000 metric tons			
1972-76	13,326	38,180	163	10,190	55,237	117,096
1977-81	16,664	41,250	955	14,831	64,726	138,426
1982-86	18,649	42,000	2,994	19,926	69,580	153,148
1987-91	16,706	56,852	7,076	21,106	65,697	167,437
			Percent of world imports			
1972-76	11.4	32.6	0.1	8.7	47.2	100.0
1977-81	12.0	29.8	0.7	10.7	46.8	100.0
1982-86	12.2	27.4	2.0	13.0	45.4	100.0
1987-91	10.0	34.0	4.2	12.6	39.2	100.0
			Percent of apparent consumption of finished steel			
1972-76	13.3	37.4	0.3	23.3	25.9	22.5
1977-81	17.1	43.7	1.5	21.9	26.4	24.3
1982-86	23.6	49.7	4.5	22.9	27.2	26.8
1987-91	19.0	52.3	8.1	17.2	24.8	25.0

[1] Data for 1991 are the most recent data available.
[2] Includes all 12 countries for all years.
[3] Includes Brazil, China, India, Korea, Mexico, and Taiwan.

Source: Calculated from statistics of the International Iron and Steel Institute.

General

Table 9
Steel mill products: U.S. imports, exports, import penetration, exports as a percent of shipments, and trade balance, 1990-92, Jan.-June 1992, and Jan.-June 1993

Year	U.S. imports	U.S. exports	Import penetration[1]	Exports/ shipments	Trade balance	
					Volume	Value
	Million short tons		*Percent*		*Million short tons*	*Billion dollars*
1990	18.1	4.8	18.5	5.7	-13.3	-6.0
1991	16.4	6.7	18.5	8.5	-9.7	-4.3
1992	17.8	4.5	18.6	5.5	-13.2	-5.2
Jan.-June 1992	8.8	2.6	18.3	6.3	-6.2	-2.5
Jan.-June 1993	8.6	2.3	17.0	5.1	-6.4	-2.5

[1] Import penetration is defined as imports as a percent of apparent steel consumption.

Source: Compiled from data of the AISI, and official statistics of the U.S. Department of Commerce.

U.S. imports and exports of steel mill products have followed different patterns since 1990, as shown in table 9. Imports declined by 10 percent from 1990 to 1991, then rose by 8 percent in 1992. Concurrently, exports increased by 39 percent, then fell by 32 percent. Import penetration in the U.S. market remained fairly stable during the period, whereas U.S. exports' share of shipments in 1991 reached its highest level in recent years (8.5 percent), but declined by 3 percentage points in 1992. From 1990 to 1991, the deficit in U.S. steel trade declined by 25 percent both in volume and in value terms (3.6 million short tons and $1.7 billion). The deficit returned to its earlier level in 1992, increasing by one-third in volume to 13.2 million short tons and by one-fifth in value to $5.2 billion. Data for January-June 1993 compared with the same period in 1992 show declining imports, a continued decline in exports, and a slight increase in the trade deficit.

Imports

Carbon and Certain Alloy Steel

Improvements in U.S. cost competitiveness and relatively strong demand in foreign markets reduced interest in exporting to the United States, and contributed to a decline of 10 percent in U.S. imports of carbon and certain alloy steel mill products during 1990-91 (table F-2). In general, this section of the report is based on data shown at various levels of detail in appendix F, tables F-1 through F-37. Imports rose by 8 percent during 1991-92 when weak economic conditions in Europe and Asia prompted a shift in global steel shipments from European and Asian markets to the U.S. market. The decline in imports in the first half of 1993 was partly the result of antidumping and countervailing duties imposed in January 1993, in response to preliminary affirmative findings in several unfair trade investigations on certain flat-rolled products (see p. 37 and appendix E).

On a regional basis, East Asia, the European Community (EC), and Latin America are the largest suppliers of U.S. imports, accounting for 26 percent, 26 percent, and 12 percent, respectively, of imports of carbon and certain alloy steel in 1992 (table F-17). These shares remained steady during the first 6 months of 1993 for the EC and Latin America. The East Asia share declined to 18 percent as major import suppliers in that region such as Japan and Korea reduced their exports to the United States.

Despite the downward movement in overall imports during January-June 1993, on a product-specific basis imports increased in many carbon and certain alloy product categories during the period (table F-2). However, those increases were more than offset by the decline in imports of sheet and strip (down 20 percent to 3.2 million short tons) following the preliminary unfair trade findings on flat-rolled products in January 1993.

Stainless and Alloy Tool Steel

Total imports of stainless and alloy tool steel products rose steadily from 1990 to June 1993 (table F-2). This increase occurred despite statements by the domestic specialty steel industry that it was preparing to file unfair trade complaints. Industry sources attributed the sharp increase in imports to product shifting by foreign producers from carbon to stainless steel, which was not covered by the unfair trade cases on flat-rolled steel.[86] Imports of stainless semifinished

[86] "Imports Soar; SSIUS Simmers Over 'Product Switching,'" *American Metal Market*, July 26, 1993; and "Buyers Like Foreign Specialty; Imports at 21% Share and Growing", *Purchasing*, June 3, 1993.

products showed the largest increase during January-June 1993, rising by 168 percent over their level in the first half of 1992 and elevating their share of apparent U.S. consumption to 64 percent. The next largest increase occurred in imports of stainless sheet and strip, which rose by 65 percent to 174,000 short tons (23 percent of apparent consumption) during the first half of 1993. On a regional basis, the EC accounted for the largest share of the increases, supplying 39 percent of the growth in imports of semifinished products and 59 percent of the growth in sheet and strip imports. Industry sources have attributed the increase in imports from the EC to available production capacity for stainless steel in Western Europe and to recent loss of certain developing-country export markets by Western Europe.[87] The strengthening of the dollar against a number of European currencies during 1992-93 has also made European products more competitive in the United States.[88]

Exports

Carbon and Certain Alloy Steel

U.S. exports of carbon and certain alloy steel mill products reached their highest level in 20 years, 6.7 million short tons, representing 8.5 percent of shipments in 1991 (table F-3). The same factors that resulted in a decline in steel imports in 1991—improved U.S. cost competitiveness, favorable exchange rates, and strong steel demand in other countries—also spurred export growth that year. However, exports fell by 32 percent to 4.5 million short tons in 1992, and they continued to decline during the first half of 1993. The decrease reflects both a better domestic market and more unfavorable global economic conditions. Neighboring Canada and Mexico were the primary export markets, together receiving 65 percent of U.S. exports in 1992. U.S. exports to East Asia fell by 74 percent from 1991 to 1992, primarily because of steep declines in exports to Japan and Korea (table F-17). The reduction in shipments to Japan is attributed to falling demand from the engineering, construction, industrial machinery, and automotive sectors.[89] Steady capacity expansion in Korea has enabled that country to supply its steel needs better internally and to reduce its reliance on imports. U.S. exports to East Asia continued to decline during January-June 1993, with the exception of exports to China, which rose by 52 percent over their level during January-June 1992. Major infrastructure development and new construction projects have spurred China's demand for steel.

Exports to Latin America (including Mexico) rose by 10 percent from 1991 to 1992, and accounted for 38 percent of U.S. exports of carbon and certain alloy steel in 1992. Lower tariffs and the elimination of such other trade barriers as import licenses gave U.S. exports increased market access. However, exports to this region declined by 27 percent in the first half of 1993.

Exports of carbon and certain alloy steel to the EC have declined steadily since 1991, falling by 26 percent from 1991 to 1992, and by 15 percent from the first half of 1992 to the first half of 1993. Recessionary economic conditions in the region have likely contributed to lower demand for foreign steel.

Stainless and Alloy Tool Steel

The increasing globalization of the stainless steel industry (in terms of growth in U.S. ownership of foreign production facilities as well as increased foreign ownership of U.S. facilities in recent years) has generally helped to boost exports, according to an industry spokesperson. The fact that some domestic producers are foreign owned, or have set up joint ventures with producers in other countries, has contributed to increased intra- and intercompany trade among countries. U.S. producers of stainless steel have indicated, however, that exports declined in 1992 and 1993 because of recessionary economies in major export markets.

These developments affect trade trends. As with carbon steel, exports of stainless and alloy tool steel peaked in 1991, then fell off in 1992 and during January-June 1993 (table F-26). Latin America is the largest market for U.S. exports of these products, accounting for 38 percent of exports in 1992. Shipments to Canada, the EC, and East Asia accounted for 31 percent, 15 percent, and 7 percent, respectively, of exports that year.

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[87] "Rising Capacity May Spark Fierce Global Rivalries," and "Domestic Mills See the World as Their Oyster," Stainless Steel Supplement, *American Metal Market*, Aug. 18, 1993.

[88] "Stainless Import Surge Has U.S. Industry Edgy", Stainless Steel Supplement, *American Metal Market*, Aug. 18, 1993.

[89] The WEFA Group, *U.S. & World Steel Executive Report*, Oct. 1992.

Appendix A
Structure of the Report and Notes on Product Coverage and Methodology

Structure

- The special-focus section on developments and conditions in the U.S. and global steel industry examines such competitiveness issues as privatization, environmental regulation, technological developments, foreign industries, and globalization.
- The section on recent developments highlights major events in both the U.S. and foreign steel industries.
- The figures and table of industry highlights present trends in U.S. average annual and monthly steel shipments, imports, exports, and import penetration, and data on raw steel production, employment, and financial operations.
- The figures and tables presenting international production and consumption highlight the geographic distribution of world production and apparent consumption.
- The tables on international trade highlights present average annual import and export data for various countries/country groups over a 20-year time period.
- The section on recent trends in U.S. trade summarize changes in U.S. trade flows as presented in appendix F, tables F-1 through F-37, described below.
- Tables F-1 through F-5 show data on shipments, imports, exports, apparent consumption, and imports as a percent of apparent consumption by major product for all grades of steel, plus carbon and specialty products separately.
- Tables F-6 through F-26 show data on the quantity of major carbon and specialty steel imports and exports on a product-by-product basis. The top 15 country suppliers, the top 10 country markets, and major regional groupings are specified.
- Table F-27 shows data on the total value of carbon and specialty steel imports and exports on a product basis.
- Tables F-28 and F-29 show data on the unit values of selected imports and exports of carbon and specialty steel products.
- Tables F-30 and F-31 show data on imports and exports of selected carbon and specialty steel products. The tables also provide information that permits an examination of the extent to which shifts in product mix within major product categories occur.
- Tables F-32 through F-37 show data on imports of steel mill products and certain fabricated products, by U.S. customs area.

Notes

Data on foreign trade and domestic shipments are compiled from official statistics of the U.S. Department of Commerce and from statistics of the American Iron and Steel Institute (AISI), respectively.

The products for which foreign trade data are collected generally correspond to those covered by the VRAs. Since the VRAs included certain fabricated products (defined as wire strand, wire ropes, cables, cordage, and fabricated structural units), the data may exceed that compiled by other organizations such as the AISI. The additional tonnage, however, is relatively small. In 1992, AISI reported imports of 17.2 million tons, which compares to the 17.8 million tons indicated in this report. The product categories most affected are structural shapes and units (which includes fabricated structurals in this report) and wire and wire products (which include wire rope and wire strand).

The source for the data on employment levels in table 1 is the U.S. Department of Labor, Bureau of Labor Statistics (BLS), rather than the American Iron and Steel Institute (AISI). AISI employment figures cover reporting companies only; these companies represent a declining share of total raw steel production. The BLS data cover the entire steel industry, as defined by Standard Industrial Code (SIC) 331, which includes the electrometallurgical products (or ferroalloy) industry. In the past, the ferroalloy industry, which is not generally defined as part of the steel industry, has represented less than 3 percent of total employment levels reporting under this SIC.

The regional groupings in tables F-6 through F-26 are defined as follows:

- East Asia includes Brunei, Burma, Cambodia, China, Hong Kong, Indonesia, Japan, South Korea, Laos, Macao, Malaysia, Philippines, Ryukyu Islands, Singapore, Taiwan, Thailand, and South Vietnam;
- EC12 includes Belgium, Luxembourg, Denmark, France, Germany (beginning in 1992, including former East Germany), Greece, Ireland, Italy, Netherlands, Portugal, Spain, and the United Kingdom;
- Eastern Europe includes Bulgaria, the Czech and Slovak Federal Republic (formerly Czechoslovakia), East Germany (included only through 1991), Hungary, Poland, and Romania;
- The Latin American Integration Association (LAIA) is the former LAFTA and includes Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Mexico, Paraguay, Peru, Uruguay, and Venezuela.

Trade data include imports under sections 9802.0060 and 9802.0080 of the Harmonized Tariff Schedule. These provisions apply to U.S. merchandise that is exported, processed, and reimported into the United States.

Data on tool steel imports exclude bearing steel products. This is consistent with industry practice and reports, which treat bearing steel as an alloy steel and categorize it according to its end form—either plate, sheet and strip, or rod. Unlike data on imports and shipments, available data on tool steel exports include some bearing steel products. As a result, apparent consumption calculations (see table F-4) are slightly understated in the case of tool steel, and slightly overstated in the case of plate, sheet and strip, and rod. The USITC staff estimates, however, that the degree of understatement/overstatement is minor, as exports of bearing steel products are believed to be relatively low.

Following consultation with the U.S. Department of Commerce, the USITC staff made the following revision to the June, July, and September 1990 export data: 686 tons of June 1990 tool steel exports to Iraq, valued at $1,411,000, have been reclassified as electrical sheet and strip; 1,681 tons of July 1990 tool steel exports to Iraq, valued at $2,360,000, have been similarly reclassified; and 25,122 tons of September 1990 stainless plate exports to France, valued at $9,162,041, have been reclassified as carbon slab exports.

Other data revisions announced by AISI include: 7,609 tons ($1,927,000) of February 1990 tool steel imports from Mexico, which were reclassified as carbon semifinished imports; and 1,258 tons ($1,537,000) of February 1991 tool steel exports to Mexico, which were reclassified as alloy bar exports.

The rails and related products category includes both new and used rails (see appendix D for complete definition). Of the 299,418 tons of rails and related products imported into the United States during 1992, 29 percent (or 85,492 tons) were used rails.

In tables F-28 and F-29, unit values are calculated using unrounded data. Import values are customs value, i.e., the data do not include insurance and freight charges from the country of origin to the United States.

To reflect industry terminology and operations more accurately, coiled plate products are included in the sheet and strip product category rather than the plate product category, effective with the June 1993 report. To adjust import data accordingly, HS subheadings 7208.11.0000, 7208.12.0000, 7208.21.1000, 7208.21.5000, 7208.22.1000, 7208.22.5000, 7211.12.0000, 7211.22.0090, 7225.30.3000, 7225.30.3005, 7225.30.3050, and 7226.91.5000 were transferred from the carbon and certain alloy plate product categories to the hot-rolled carbon and certain alloy sheet categories, and HS subheadings 7219.11.0000, 7219.12.0000, 7219.12.0005, 7219.12.0015, 7219.12.0030, 7219.12.0045, 7219.12.0060, 7219.12.0075, 7219.12.0080, and 7220.11.0000 were transferred from the stainless steel plate category to the stainless steel sheet and strip category. To adjust export data, Schedule B subheadings 7208.11.0000, 7208.12.0000, 7208.21.0000, 7208.22.0000, 7211.12.0000, 7211.22.0000, and 7225.30.0000 were reassigned from the carbon and certain alloy plate category to hot-rolled carbon and certain alloy sheet, and Schedule B subheadings 7219.11.0000, 7219.12.0000, and 7220.11.0000 were transferred from stainless steel plate to stainless steel sheet and strip.

APPENDIX B
Request Letter from the Honorable Dan Rostenkowski, Chairman of the Committee on Ways and Means, U.S. House of Representatives

COMMITTEE ON WAYS AND MEANS

U.S. HOUSE OF REPRESENTATIVES
WASHINGTON, DC 20515-6348

June 11, 1992

The Honorable Donald Newquist
Chairman
U.S. International Trade Commission
500 E Street, S.W.
Washington, D.C. 20436

Dear Mr. Chairman:

The recent expiration of the Voluntary Restraint Agreements (VRAs), the apparent collapse of the negotiations for a Multilateral Steel Agreement (MSA) and the filing of trade cases by the U.S. industry have combined to create an uncertain future for U.S. steel trade that is a source of continued concern to the Committee on Ways and Means. In light of this, the Committee hereby requests the U.S. International Trade Commission to provide it with semi-annual monitoring reports, under Section 332 of the Tariff Act of 1930, on the the status of, and prospects for, the U.S. steel industry for the period from January 1992 through December 1994.

This series of reports should combine concise analysis of global industry trends and competitiveness issues with key product trade information. They should generally follow the format of, and contain trade data and information similar to that provided in, the reports on all carbon and alloy (including stainless steel) mill products which the Commission has been providing under investigation No. 332-226. In addition, each year one of the reports should contain an annual review focusing primarily on developments and conditions in the U.S. industry and should highlight significant developments in the industry's competitiveness since 1990 (e.g. operating performance, capital expenditures and R&D, technology, and environmental expenditures). Finally, the Committee recognizes that limited primary data gathering, particularly the use of questionnaires, is necessary to examine these developments.

As you know, the Commission's current series of quarterly reports on the steel industry will be completed in June 1992, and will contain data through March 1992, when the recent VRAs expired. The first report under the new series should be published in September 1992 (covering data from January through

June 1992). Subsequent reports should then appear in April and September, with the April report containing an annual review of the domestic industry. I request that the Commission provide the Committee with these semiannual reports through April 1995, at which time the Committee will reevaluate the Commission's monitoring efforts in terms of their relevance to the global steel trade environment.

Thank you for your cooperation in this matter.

Sincerely yours,

Dan Rostenkowski
Chairman

APPENDIX C
Notice of the Commission's Investigation

UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, DC

(332-327)

Steel: Semiannual Monitoring Report

AGENCY: United States International Trade Commission

ACTION: Institution of investigation.

EFFECTIVE DATE: July 9, 1992

FOR FURTHER INFORMATION CONTACT: Ms. Nancy Fulcher, Office of Industries/Minerals and Metals Division (202-205-3434), or Mr. Mark Paulson, Office of Industries/Minerals and Metals Division (202-205-3429), U.S. International Trade Commission, Washington, D.C. 20436. Hearing-impaired persons are advised that information on this investigation can be obtained by contacting the Commission's TDD terminal on 202-205-2648.

BACKGROUND AND SCOPE OF INVESTIGATION: Following receipt on June 11, 1992, of a request from the Committee on Ways and Means of the U.S. House of Representatives, the Commission on July 9, 1992, instituted investigation No. 332-327, under section 332(g) of the Tariff Act of 1930 (19 U.S.C. 1332(g)) concerning the status of, and prospects for, the U.S. steel industry for the period from January 1991 through December 1994.

As requested by the Committee, the Commission will provide semiannual reports in which it will seek to combine concise analysis of global industry trends and competitiveness issues with key product trade information. The reports will generally follow the format of, and contain trade data and information similar to that provided in, the reports on all carbon and alloy (including stainless steel) mill products which the Commission provided under investigation No. 332-226: Quarterly Report on the Status of the Steel Industry. In addition, each year one of the reports will contain an annual review focusing primarily on developments and conditions in the U.S. industry and will highlight significant developments in the industry's competitiveness since 1990 (e.g., operating performance, capital expenditures and R&D, technology, and environmental expenditures).

As requested by the Committee, the Commission intends to submit its first report under the new series no later than September 1992 (covering data from January through June 1992). Subsequent reports will be submitted in April and September, with the April report containing the annual review of the domestic industry. Reports will be provided through April 1995.

WRITTEN SUBMISSIONS: Interested persons are invited to submit written statements concerning the matters to be addressed in the report containing the Commission's annual review of the domestic industry. Commercial or financial information that a party desires the Commission to treat as confidential must be submitted on separate sheets of paper, each clearly marked "Confidential Business Information" at the top. (Generally, submission of separate confidential and public versions of the submission would be appropriate.) All

submissions requesting confidential treatment must conform with the requirements of § 201.6 of the Commission's Rules of Practice and Procedure (19 CFR 201.6). All written submissions, except for confidential business information, will be made available in the Office of the Secretary of the Commission for inspection by interested persons. To be assured of consideration by the Commission, written statements should be submitted to the Commission at the earliest practical date and should be received no later than February 26, 1993; February 25, 1994; and February 24, 1995. All submissions should be addressed to the Secretary to the Commission at the Commission's Office in Washington, DC.

By order of the Commission.

Paul R. Bardos
Acting Secretary

Issued: July 10, 1992

APPENDIX D
Definitions of Certain Terms and Descriptions of the Products Subject to the Investigation

1. *Steel.*—An alloy of iron and carbon that is malleable as first cast and which contains by weight 2 percent or less of carbon. Steel may contain other elements, but iron must predominate, by weight, over each of the other elements.

2. *Carbon steel.*—Steel, other than chromium, that by weight contains 2 percent or less of carbon, and in which none of the elements listed below meets or exceeds the quantity, by weight, respectively indicated:

1.65 percent of manganese; or
0.25 percent of phosphorus; or
0.35 percent of sulphur; or
0.60 percent of silicon; or
0.40 percent of copper; or
0.30 percent of aluminum; or
0.30 percent of chromium; or
0.30 percent of cobalt; or
0.40 percent of lead; or
0.30 percent of nickel; or
0.30 percent of tungsten; or
0.10 percent of any other metallic element.

3. *Alloy steel.*—Steel that contains any of the elements listed in definition 2 (above) in excess of its specified quantity.

(i) *Stainless steel.*—Any alloy steel that contains by weight 1.2 percent or less of carbon and 10.5 percent or more of chromium, with or without other elements.

(ii) *Tool steel.*—Alloy steels that contain the following combinations of elements in the quantity, by weight, respectively indicated:

More than 1.2 percent carbon and more than 10.5 percent chromium; or
Not less than 0.3 percent carbon and 1.25 percent or more but less than 10.5 percent chromium; or
Not less than 0.85 percent carbon and 1 percent to 1.8 percent, inclusive, manganese; or
0.9 percent to 1.2 percent, inclusive, chromium and 0.9 percent to 1.4 percent, inclusive, molybdenum; or
Not less than 0.5 percent carbon and not less than 3.5 percent molybdenum; or
Not less than 0.5 percent carbon and not less than 5.5 percent tungsten.

(iii) *Certain alloy steel.*—Alloy steel not covered under 3.(i) "Stainless steel" or 3.(ii) "Tool steel."

4. *Galvanized.*—Steel which has been coated or plated with zinc.

5. *Hot-rolled.*—Steel reduced to its final thickness by heating and rolling the product at elevated temperature (usually above 2,200 °F).

6. *Cold-rolled.*—Steel reduced to its final thickness by rolling the product without heating it immediately prior to the rolling operation.

7. *Continuous casting.*—The method of producing semifinished products in which molten steel flows evenly into a caster where it is rapidly cooled, causing it to solidify directly into semifinished products such as slabs and billets.

8. *Short ton.*—Two thousand (2,000) pounds.

Unlike the TSUSA system of classification, the HTS does not differentiate by dimension those steel products formerly referred to as blooms and billets, slabs and sheet bars, plate, sheet, and strip. Instead, these products are included in two larger categories: flat-rolled and semifinished (described below). However, for purposes of data

comparability with previous Commission reports under investigation No. 332-226 *(Monthly and Quarterly Reports on the Status of the Steel Industry)*, and in the interest of providing useful information and coverage of the steel industry, this report will continue to designate such product categories (e.g., blooms and billets, slabs and sheet bars, plate, hot-rolled and cold-rolled sheet, and strip). A partial basis for classification are those definitions found in Federal Register Notice 52897, December 29, 1988.

For certain products, export categories under the Schedule B classification system are broader than import product categories under the HTS; therefore, there is no overall one-to-one correspondence between the two classification systems. For this reason, export classifications are listed separately from import classifications in the following definitions.

9. *Semifinished products* include:

Continuous cast products of solid section, not presented in coils, whether or not subjected to primary hot-rolling.

Other products of solid section that have not been further worked than subjected to primary hot-rolling or roughly shaped by forging, including blanks, angles, shapes, or sections.

For the purposes of this investigation, semifinished products are classified as follows:

(i) *Ingots.*—Castings resulting from the solidification of molten steel and having a columnar form suitable for working by rolling or forging. Ingots are included in AISI (American Iron and Steel Institute) product group No. 1A.

(A) *Carbon and certain alloy ingots;* provided for in subheadings 7206.10.0000, 7206.90.0000, 7224.10.0005, 7224.10.0075 of the *Harmonized Tariff Schedules of the United States (HTS).*

(B) *Stainless steel ingots*; provided for in subheading 7218.10.0000 of the *HTS.*

(ii) *Blooms, billets, slabs, and sheet bars.*—Other continuous cast products of solid cross section, which have not been further worked than subjected to primary hot-rolling or roughly shaped by forging including blanks for angles, shapes or sections. These products are not presented in coils and are included in AISI product group No. 1B.

(A) *Carbon and certain alloy blooms and billets;* provided for in subheadings 7207.11.0000, 7207.12.0010, 7207.19.0030, 7207.19.0090, 7207.20.0025, 7207.20.0075, 7207.20.0090, 7224.90.0005, 7224.90.0045, 7224.90.0065, 7224.90.0075 of the HTS.

(B) *Carbon and certain alloy slabs and sheet bars;* provided for in subheadings 7207.12.0050, 7207.20.0045, 7224.90.0055 of the HTS.

(C) *Stainless steel blooms and billets;* provided for in subheadings 7218.90.0005, 7218.90.0015, 7218.90.0025, 7218.90.0032, 7218.90.0040, 7218.90.0050, 7218.90.0060, 7218.90.0075, 7218.90.0085, 7218.90.0095 of the *HTS.*

(D) *Stainless steel slabs and sheet bars;* provided for in subheading 7218.90.0038 of the *HTS.*

Exports of carbon and certain alloy semifinished products are provided for in Schedule B subheadings 7206.10.0000, 7206.90.0000, 7207.11.0000, 7207.12.0000, 7207.19.0000, 7207.20.0000, 7224.10.0000, 7224.90.0000.

Exports of stainless steel semifinished products are provided for in Schedule B subheadings 7218.10.0000, 7218.90.0000.

10. *Flat-rolled products.*—Rolled products of solid rectangular (other than square) cross section, whether perforated, corrugated, polished, or with a pattern derived from

rolling, which do not conform to the definition of semifinished products above in the form of:

- coils of successively superimposed layers; or
- straight lengths, which if of a thickness less than 4.75 mm are of a width measuring at least 10 times the thickness or if of a thickness of 4.75 mm or more are of a width which exceeds 150 mm and measures at least twice the thickness. Also those products of a shape other than rectangular or square of a width of 600 mm or more, not elsewhere specified.

(i) *Plates (cut-to-length).*—Flat-rolled products with a thickness equal to or exceeding 4.75 mm, not in coils. Plates are included in AISI product group No. 6A.

(A) *Carbon plate;* provided for in subheadings 7208.31.0000, 7208.32.0000, 7208.33.1000, 7208.33.5000, 7208.41.0000, 7208.42.0000, 7208.43.0000, 7210.90.1000, 7211.11.0000, 7211.21.0000, 7211.22.0045 of the *HTS*.

Exports of carbon plates are provided for in Schedule B subheadings 7208.31.0000, 7208.32.0000, 7208.33.0000, 7208.41.0000, 7208.42.0000, 7208.43.0000, 7210.90.1000, 7211.11.0000, 7211.21.0000.

(B) Certain alloy plate; provided for in subheadings 7225.40.1015, 7225.40.3005, 7225.40.3050, 7225.50.6000 of the HTS.

Exports of certain alloy plates are provided for in Schedule B subheadings 7225.30.0000, 7225.40.0000.

(C) Stainless steel plate; provided for in subheadings 7219.21.0005, 7219.21.0050, 7219.22.0005, 7219.22.0050, 7219.31.0010, 7219.31.0050 of the HTS.

Exports of stainless steel plates are provided for in Schedule B subheadings 7219.21.0000, 7219.22.0000, 7219.31.0000.

(ii) *Sheets and strip (including coiled plate).*—Flat-rolled products in either coils or straight lengths. Sheet has a width equal to or exceeding 600 mm; strip width is less than 600 mm (but at least 10 times the thickness). Sheets and strip are included in AISI product group Nos. 6B, 28, 29, 29A, 30, 31, 32, 33A, 33B, 34, 35, 36, and 37. For the purposes of this investigation, sheets and strip are classified as follows:

(A) *Hot-rolled carbon and certain alloy sheet;* provided for in subheadings 7208.11.0000, 7208.12.0000, 7208.13.1000, 7208.13.5000, 7208.14.1000, 7208.14.5000, 7208.21.1000, 7208.21.5000, 7208.22.1000, 7208.22.5000, 7208.23.1000, 7208.23.5030, 7208.23.5090, 7208.24.1000, 7208.24.5030, 7208.24.5090, 7208.34.1000, 7208.34.5000, 7208.35.1000, 7208.35.5000, 7208.44.0000, 7208.45.0000, 7208.90.0000, 7211.12.0000, 7211.22.0090, 7225.30.3000, 7225.30.3005, 7225.30.3050, 7225.30.5030, 7225.30.7000, 7225.40.5030, 7225.40.7000, 7226.91.1530, 7226.91.5000 of the HTS.

Exports of hot-rolled carbon and certain alloy sheet are provided for in Schedule B subheadings 7208.11.0000, 7208.12.0000, 7208.13.0000, 7208.14.0000, 7208.21.0000, 7208.22.0000, 7208.23.0000, 7208.24.0000, 7208.34.0000, 7208.35.0000, 7208.44.0000, 7208.45.0000, 7208.90.0000, 7211.12.0000, 7211.22.0000, 7225.30.0000.

(B) *Hot-rolled carbon and certain alloy strip;* provided for in subheadings 7211.19.1000, 7211.19.5000, 7211.29.1000, 7211.29.3000, 7211.29.5000, 7211.29.7030, 7211.29.7060, 7211.29.7090, 7226.91.2530, 7226.91.7000, 7226.91.8000 of the HTS.

Exports of hot-rolled carbon and certain alloy strip are provided for in Schedule B subheadings 7211.19.0000, 7211.29.0000, 7226.91.0000.

(C) *Cold-rolled carbon and certain alloy sheet and strip:*

(a) *Black plate;* provided for in subheading 7209.24.1000 of the HTS.

Exports of black plate are provided for in Schedule B subheading 7209.24.1000.

(b) *Electrical sheet and strip*; provided for in subheadings 7225.10.0000, 7226.10.1000, 7226.10.5030, 7226.10.5060 of the *HTS*.

Exports of electrical sheet and strip are provided for in Schedule B subheadings 7225.10.0000, 7226.10.0000.

(c) *Other sheet;* provided for in subheadings 7209.11.0000, 7209.12.0030, 7209.12.0090, 7209.13.0030, 7209.13.0090, 7209.14.0030, 7209.14.0090, 7209.21.0000, 7209.22.0000, 7209.23.0000, 7209.24.5000, 7209.31.0000, 7209.32.0000, 7209.33.0000, 7209.34.0000, 7209.41.0000, 7209.42.0000, 7209.43.0000, 7209.44.0000, 7209.90.0000, 7210.70.3000, 7225.50.1030, 7225.50.7000, 7225.50.8000, 7225.90.0000 of the *HTS*.

Exports of other cold-rolled sheet are provided for in Schedule B subheadings 7209.11.0000, 7209.12.0000, 7209.13.0000, 7209.14.0000, 7209.21.0000, 7209.22.0000, 7209.23.0000, 7209.24.0000, 7209.24.5000, 7209.31.0000, 7209.32.0000, 7209.33.0000, 7209.34.0000, 7209.41.0000, 7209.42.0000, 7209.43.0000, 7209.44.0000, 7209.90.0000, 7225.50.0000, 7225.90.0000.

(d) *Other strip*; provided for in subheadings 7211.30.1030, 7211.30.1090, 7211.30.3000, 7211.30.5000, 7211.41.1000, 7211.41.3030, 7211.41.3090, 7211.41.5000, 7211.41.7030, 7211.41.7060, 7211.41.7090, 7211.49.1030, 7211.49.1090, 7211.49.3000, 7211.49.5030, 7211.49.5060, 7211.49.5090, 7211.90.0000, 7212.40.1000, 7212.40.5000, 7226.92.1030, 7226.92.3030, 7226.92.5000, 7226.92.7005, 7226.92.7050, 7226.92.8005, 7226.92.8050, 7226.99.0000 of the HTS.

Exports of other cold-rolled strip are provided for in Schedule B subheadings 7210.70.0000, 7211.30.0000, 7211.41.0000, 7211.49.0000, 7211.90.0000, 7212.40.0000, 7226.92.4000, 7226.99.0000.

(D) *Galvanized sheet and strip;* provided for in subheadings 7210.31.0000, 7210.39.0000, 7210.41.0000, 7210.49.0030, 7210.49.0090, 7210.70.6030, 7210.70.6060, 7212.21.0000, 7212.29.0000, 7212.30.1030, 7212.30.1090, 7212.30.3000, 7212.30.5000 of the HTS.

Exports of galvanized sheet and strip are provided for in Schedule B subheadings 7210.31.0000, 7210.39.0000, 7210.41.0000, 7210.49.0000, 7212.21.0000, 7212.29.0000, 7212.30.0000.

(E) *Tin plate;* provided for in subheadings 7210.11.0000, 7210.12.0000, 7212.10.0000 of the HTS.

Exports of tin plate are provided for in Schedule B subheadings 7210.11.0000, 7210.12.0000, 7212.10.0000.

(F) *Tin free;* provided for in subheading 7210.50.0000 of the HTS.

Exports of tin free sheets are provided for in Schedule B subheading 7210.50.0000.

(G) *Other metallic coated sheet and strip;* provided for in subheadings 7210.20.0000, 7210.60.0000, 7210.70.6090, 7210.90.6000, 7210.90.90000, 7212.50.0000, 7212.60.0000 of the *HTS*.

Exports of other metallic coated sheet and strip are provided for in Schedule B subheadings 7210.20.0000, 7210.60.0000, 7210.90.5000, 7212.50.0000, 7212.60.0000.

(H) *Stainless steel hot-rolled sheet;* provided for in subheadings 7219.11.0000, 7219.12.0000, 7219.12.0005, 7219.12.0015, 7219.12.0030, 7219.12.0045, 7219.12.0060, 7219.12.0075, 7219.12.0080, 7219.13.0030, 7219.13.0060, 7219.14.0030, 7219.14.0060, 7219.23.0030, 7219.23.0060, 7219.24.0030, 7219.24.0060, 7220.11.0000 of the HTS.

Exports of stainless steel hot-rolled sheet are provided for in Schedule B subheadings 7219.11.0000, 7219.12.0000, 7219.13.0000, 7219.14.0000, 7219.23.0000, 7219.24.0000, 7220.11.0000.

(I) *Stainless steel cold-rolled sheet;* provided for in subheadings 7219.32.0015, 7219.32.0030, 7219.32.0045, 7219.32.0060, 7219.33.0015, 7219.33.0030, 7219.33.0045, 7219.33.0060, 7219.34.0010, 7219.34.0050, 7219.35.0010, 7219.35.0050, 7219.90.0000 of the HTS.

Exports of stainless steel cold-rolled sheet are provided for in Schedule B subheadings 7219.32.0000, 7219.33.0000, 7219.34.0000, 7219.35.0000, 7219.90.0000.

(J) *Stainless steel strip;* provided for in subheadings 7220.12.1000, 7220.12.5000, 7220.20.1000, 7220.20.6005, 7220.20.6050, 7220.20.7005, 7220.20.7050, 7220.20.8000, 7220.20.9000, 7220.90.0000 of the HTS.

Exports of stainless steel strip are provided for in Schedule B subheadings 7220.12.0000, 7220.20.0000, 7220.90.0000.

11. *Bars.*— Hot-rolled products, over 0.55 inches (14mm) in diameter, whether or not in irregularly wound coils, which have a solid cross-section along their length in the shape of circles, segments of circles, ovals, rectangles (including squares), triangles, or other convex polygons. Such products may:

- Have indentations, ribs, grooves or other deformations produced during the rolling process (reinforcing bars and rods);

- Be twisted after rolling.

For purposes of this investigation the term "bars" also includes hollow drill steel, which is a hollow product suitable for making mining drills or mining drill rods, of which the greatest external dimension of the cross-section exceeds 15 mm but does not exceed 52 mm, and of which the greatest internal dimension does not exceed one-half of the greatest external dimension. Bars and hollow drill steel are found in AISI product groups Nos. 14, 14A, 15, and 16.

For the purposes of this investigation, bars and light structural shapes are classified as follows:

(i) *Hot-rolled carbon bars.*—Provided for in subheadings 7213.39.0060, 7213.49.0060, 7213.50.0060, 7214.10.0000, 7214.30.0000, 7214.40.0010, 7214.40.0030, 7214.40.0050, 7214.50.0010, 7214.50.0030, 7214.50.0050, 7214.60.0010, 7214.60.0030, 7214.60.0050, 7215.90.1000 of the HTS, and included in AISI product group No. 14.

Exports of hot-rolled carbon bars are provided for in Schedule B subheadings 7213.20.0000, 7214.10.0000, 7214.30.0000, 7214.40.0000, 7214.50.0000, 7214.60.0000.

(ii) *Hot-rolled certain alloy bars.*—Provided for in subheadings 7227.20.0000, 7227.90.6005, 7227.90.6050, 7228.20.1000, 7228.30.8005, 7228.30.8050, 7228.40.0000, 7228.60.6000, 7228.80.0000 of the HTS, and included in AISI product group No. 14.

Exports of hot-rolled alloy bars are provided for in Schedule B subheadings 7227.20.0000, 7228.20.0000, 7228.30.8000, 7228.40.0000, 7228.60.5000, 7228.80.0000.

(iii) *Cold-formed carbon bars.*—Provided for in subheadings 7215.10.0000, 7215.20.0000, 7215.30.0000, 7215.40.0000, 7215.90.3000, 7215.90.5000 of the HTS, and included in AISI product group No. 16.

Exports of cold-formed carbon bars are provided for in Schedule B subheadings 7215.10.0000, 7215.20.0000, 7215.30.0000, 7215.40.0000, 7215.90.0000.

(iv) *Cold-formed certain alloy bars.*—Provided for in subheadings 7228.20.5000, 7228.50.5005, 7228.50.5050, 7228.60.8000 of the HTS, and included in AISI product group No. 16.

Exports of cold-formed certain alloy bars are provided for in Schedule B subheading 7228.50.5000.

(v) *Reinforcing carbon and certain alloy steel bars.*—Hot-rolled steel bars, of solid cross section, having deformations of various patterns on their surfaces; provided for in subheadings 7213.10.0000, 7214.20.0000 of the *HTS*, and included in AISI product group No. 15.

Exports of reinforcing carbon and certain alloy steel bars are provided for in Schedule B subheadings 7213.10.0000, 7214.20.0000.

(vi) *Light structural shapes.*—Bar-size light shapes having a cross-sectional dimension of less than 7.62 cm provided for in subheadings 7216.10.0010, 7216.10.0050, 7216.21.0000, 7216.22.0000, 7228.70.3060, 7228.70.3080 of the HTS, and included in AISI product group No. 14A.

Exports of light structural shapes are provided for in Schedule B subheadings 7216.10.0000, 7216.21.0000, 7216.22.0000.

(vii) *Stainless steel bars and shapes.*—Provided for in subheadings 7221.00.0005, 7221.00.0045, 7221.00.0075, 7222.10.0005, 7222.10.0050, 7222.20.0005, 7222.20.0045, 7222.20.0075, 7222.30.0000, 7222.40.3060, 7222.40.3080 of the HTS and included in AISI product group Nos. 14, 15, and 16.

Exports of stainless steel bars and shapes are provided for in Schedule B subheadings 7222.10.0000, 7222.20.0000, 7222.30.0000, 7222.40.0000.

12. *Wire rods and related products:*

(i) *Wire rods.*—Coiled, semifinished, hot-rolled products of solid cross section, approximately round in cross section, not over 19mm in diameter. Wire rods are included in AISI product group No. 3.

For the purposes of this investigation, wire rods are classified as follows:

(A) Carbon steel wire rods; provided for in subheadings 7213.31.3000, 7213.31.6000, 7213.39.0030, 7213.39.0090, 7213.41.3000, 7213.41.6000, 7213.49.0030, 7213.49.0090, 7213.50.0020, 7213.50.0040, 7213.50.0080 of the HTS.

Exports of carbon steel wire rods are provided for in Schedule B subheadings 7213.31.0000, 7213.39.0000, 7213.41.0000, 7213.49.0000, 7213.50.0000.

(B) Certain alloy steel wire rods; provided for in subheadings 7227.90.1030, 7227.90.2030, 7228.30.2000, 7228.50.1010, 7228.60.1030 of the HTS.

Exports of certain alloy steel wire rods are provided for in Schedule B subheading 7227.90.0000.

(C) Stainless steel wire rods; provided for in subheadings 7221.00.0015, 7221.00.0030 of the HTS.

Exports of stainless steel wire rods are provided for in Schedule B subheading 7221.00.0000.

(ii) *Steel wire.*—Cold-formed products in coils, of any uniform solid cross section along their whole length, which do not conform to the definition of flat-rolled products. Steel wire is included in AISI product group No. 23.

For the purpose of this investigation, steel wire is classified as follows:

(A) *Carbon steel wire;* provided for in subheadings 7217.11.1000, 7217.11.2000, 7217.11.3000, 7217.11.5020, 7217.11.5040, 7217.11.5060, 7217.11.5080, 7217.11.7030, 7217.11.7090, 7217.11.9000, 7217.12.1000, 7217.12.3030, 7217.12.3060, 7217.12.5000, 7217.12.7000, 7217.13.1000, 7217.13.3030, 7217.13.3060, 7217.13.5000, 7217.13.7000, 7217.19.5000, 7217.21.1000, 7217.21.3015, 7217.21.3030, 7217.21.3045, 7217.21.3060, 7217.21.3075, 7217.21.3090, 7217.21.5000, 7217.22.1015, 7217.22.1030, 7217.22.1050, 7217.22.5000, 7217.23.1015, 7217.23.1030, 7217.23.1050, 7217.23.5000, 7217.29.5000,

7217.31.1000, 7217.31.3015, 7217.31.3030, 7217.31.3045, 7217.31.3060, 7217.31.3075, 7217.31.3090, 7217.31.5000, 7217.32.1015, 7217.32.1030, 7217.32.1050, 7217.32.5000, 7217.33.1015, 7217.33.1030, 7217.33.1050, 7217.33.5000, 7217.39.5000 of the HTS.

Exports of carbon steel wire are provided for in Schedule B subheadings 7217.11.0000, 7217.12.0000, 7217.13.0000, 7217.19.0000, 7217.21.0000, 7217.22.0000, 7217.23.0000, 7217.29.0000, 7217.31.0000, 7217.32.0000, 7217.33.0000, 7217.39.0000.

(B) *Certain alloy steel wire;* provided for in subheadings 7229.20.0000, 7229.90.1000, 7229.90.5015, 7229.90.5030, 7229.90.5050, 7229.90.9000 of the HTS.

Exports of certain alloy steel wire are provided for in Schedule B subheadings 7229.20.0000, 7229.90.0000.

(C) *Stainless steel wire;* provided for in subheadings 7223.00.1015, 7223.00.1030, 7223.00.1045, 7223.00.1060, 7223.00.1075, 7223.00.5000, 7223.00.9000 of the HTS.

Exports of stainless steel wire are provided for in Schedule B subheading 7223.00.0000.

(iii) *Carbon and certain alloy steel wire products.*—As defined by the following:

(A) *Nails and brads, spikes, staples, and tacks;* fasteners, of one piece construction, made of round wire, and not including thumb tacks, staples in strip form, corrugated fasteners, glaziers' points, hook nails, ring nails, or fasteners suitable for use in power-actuated hand tools; as provided for in subheadings 7317.00.1000, 7317.00.5505, 7317.00.5510, 7317.00.5520, 7317.00.5530, 7317.00.5540, 7317.00.5550, 7317.00.5560, 7317.00.5570, 7317.00.5580, 7317.00.5590, 7317.00.7500, 8305.20.0000 of the HTS. Nails and staples are included in AISI product group No. 51 (pt.).

Exports of nails and brads, spikes, staples, and tacks are provided for in Schedule B subheadings 7317.00.1000, 7317.00.9000, 8305.20.0000.

(B) *Barbed wire;* a wire, or strand of twisted wires, armed with barbs or sharp points; as provided for in subheading 7313.00.0000 of the *HTS*. Barbed wire is included in AISI product group No. 52.

Exports of barbed wire are provided for in Schedule B subheading 7313.00.0000.

(C) *Wire expanded metal, grill and fencing;* products, whether or not galvanized, wholly of round wire with a maximum cross-sectional diameter of 3 mm or more, having a mesh size of 100 cm^2 or more, whether or not such wire is covered with plastics; as provided for in subheadings 7314.20.0000, 7314.30.1000, 7314.30.5000, 7314.41.0030, 7314.41.0060, 7314.42.0030, 7314.42.0060, 7314.49.3000, 7314.49.6000 of the *HTS*. The products are included in AISI product group No. 50.

Exports of wire expanded metal, grill and fencing are provided for in Schedule B subheadings 7314.20.0000, 7314.30.0000, 7314.41.0000, 7314.42.0000, 7314.49.0000.

(D) *Baling wire and ties;* with or without buckles or fastenings and whether or not coated with paint or other substance; as provided for in subheading 7326.20.0010 of the HTS and included in AISI product group No. 53.

(E) *Wire strand;* two or more wires that together constitute one of the parts which are twisted together to form rope, cord, or cordage, suitable for fencing purposes, not fitted with fittings, not made up into articles, not of brass plated wire, as provided for in subheadings 7312.10.1030, 7312.10.1050, 7312.10.1070, 7312.10.3005, 7312.10.3010, 7312.10.3012, 7312.10.3020, 7312.10.3065, 7312.10.3070, 7312.10.3074, 7312.10.3080 of the *HTS*. Wire strand is included in AISI product group No. 47.

Exports of wire strand are provided for in Schedule B subheadings 7312.10.3015, 7312.10.3500.

(F) *Wire ropes, cables, and cordage;* products made by the twisting of a number of wire strands and are not covered with nonmetallic material, not fitted with fittings, not

made up into articles, and, if valued 13 cents or more per pound, not of brass plated wire; as provided for in subheadings 7312.10.6000, 7312.10.9030, 7312.10.9060, 7312.10.9090 of the *HTS*. Wire ropes, cables, and cordage are included in AISI product group No. 46.

Exports of wire ropes, cables, and cordage are provided for in Schedule B subheading 7312.10.8500.

13. *Structurals*.—Nontubular products not conforming completely to the respective specifications set forth in the HTS for semi-finished, flat-rolled, bars and rod or wire.

(i) *Heavy structural shapes*.—Products having a maximum cross-sectional dimension of 7.62 cm or more, and *sheet piling;* as provided for in subheadings 7216.31.0000, 7216.32.0000, 7216.33.0030, 7216.33.0060, 7216.33.0090, 7216.40.0010, 7216.40.0050, 7216.50.0000, 7222.40.3020, 7222.40.3040, 7228.70.3020, 7228.70.3040, 7301.10.0000 of the HTS. These products are included in AISI product group Nos. 4 and 5.

Exports of heavy structural shapes and sheet piling are provided for in Schedule B subheadings 7216.31.0000, 7216.32.0000, 7216.33.0000, 7216.40.0000, 7216.50.0000, 7216.60.0000, 7216.90.0000, 7301.10.0000.

(ii) *Fabricated structural units*.—Columns, pillars, posts, beams, girders, and similar structural units; as provided for in subheadings 7216.60.0000, 7216.90.0000, 7222.40.6000, 7228.70.6000, 7301.20.1000, 7301.20.5000, 7308.10.0000, 7308.20.0000, 7308.40.0000, 7308.90.3000, 7308.90.6000, 7308.90.9030, 7308.90.9090, 8430.49.4000 of the *HTS*. These products are included in AISI product group Nos. 38 and 39.

Exports of fabricated structural units are provided for in Schedule B subheadings 7228.70.0000, 7301.20.1000, 7301.20.5000, 7308.10.0000, 7308.20.0000, 7308.40.0000, 7308.90.1000, 7308.90.9030, 7308.90.9090, 8430.49.4000.

14. *Rails and related railway products* as defined by the following:

(i) *Rails*.— Hot-rolled steel products, whether punched or not punched, weighing not less than 8 pounds per yard, with cross-sectional shapes intended for carrying wheel loads in railroad, railway, and crane runway applications; as provided for in subheadings 7302.10.1010, 7302.10.1015, 7302.10.1025, 7302.10.1035, 7302.10.1045, 7302.10.1055, 7302.10.1065, 7302.10.1075, 7302.10.5020, 7302.10.5040, 7302.10.5060 of the *HTS*. Rails are included in AISI product group Nos. 7, 8, and 41.

Exports of rails are provided for in Schedule B subheadings 7302.10.1020, 7302.10.1030, 7302.10.1080, 7302.10.5000.

(ii) *Joint bars*.—Hot-rolled steel products, usually punched or slotted, designed to connect the ends of adjacent rails in track; *tie plates* are hot-rolled steel products which are punched to provide holes for spikes and have one or two shoulder sections as rail guides and are used to support rails in track, to maintain track gauge, and to protect the ties; all the foregoing, as provided for in subheadings 7302.20.0000, 7302.30.0000, 7302.40.0000, 7302.90.0000 of the *HTS*. Joint bars and tie plates are included in AISI product group Nos. 9 and 42.

Exports of joint bars, tie plates, and other railway track material are provided for in Schedule B subheadings 7302.20.0000, 7302.30.0000, 7302.40.0000, 7302.90.0000.

(iii) *Railway track spikes*.—Products of one-piece construction, used to secure tie plates or ties; as provided for in subheadings 7317.00.6530, 7317.00.6560 of the HTS. Railway track spikes are included in AISI product group No. 42 (pt.).

(iv) *Railroad and railway (RR) axles and wheels, parts thereof, and axle bars*.—Provided for in subheadings 8607.19.1000, 8607.19.2000 of the *HTS*. These articles are included in AISI product group No. 43.

Exports of railroad and railway (RR) axles and wheels, parts thereof, and axle bars are provided for in Schedule B subheadings 8607.19.1000 and 8607.19.2000.

15. *Pipes and tubes and blanks therefor.*—Tubular products, including hollow bars and hollow billets but not including hollow drill steel, of any cross-sectional configuration, by whatever process made, whether seamless, brazed, or welded and whether with an open or lock seam or joint. For the purposes of this investigation, pipes and tubes and blanks therefor are classified as follows:

(i) *Oil country tubular goods.*—Provided for in subheadings 7304.20.1000, 7304.20.1010, 7304.20.1020, 7304.20.1030, 7304.20.1040, 7304.20.1050, 7304.20.1060, 7304.20.1080, 7304.20.2000, 7304.20.2010, 7304.20.2020, 7304.20.2030, 7304.20.2040, 7304.20.2050, 7304.20.2060, 7304.20.2080, 7304.20.3000, 7304.20.3010, 7304.20.3020, 7304.20.3030, 7304.20.3040, 7304.20.3050, 7304.20.3060, 7304.20.3080, 7304.20.4010, 7304.20.4020, 7304.20.4030, 7304.20.4040, 7304.20.4050, 7304.20.4060, 7304.20.4080, 7304.20.5015, 7304.20.5030, 7304.20.5045, 7304.20.5060, 7304.20.5075, 7304.20.6015, 7304.20.6030, 7304.20.6045, 7304.20.6060, 7304.20.6075, 7304.20.7000, 7304.20.8030, 7304.20.8045, 7304.20.8060, 7305.20.2000, 7305.20.4000, 7305.20.6000, 7305.20.8000, 7306.20.1030, 7306.20.1090, 7306.20.2000, 7306.20.3000, 7306.20.4000, 7306.20.6010, 7306.20.6050, 7306.20.8010, 7306.20.8050 of the HTS. Oil country tubular goods are included in AISI product group No. 19.

Exports of oil country tubular goods are provided for in Schedule B subheadings 7304.20.1500, 7304.20.3500, 7304.20.5000, 7304.20.6000, 7304.20.7000, 7304.20.8000, 7305.20.3000, 7305.20.7000, 7306.20.1500, 7306.20.2500, 7306.20.6000, 7306.20.8000.

(ii) *Line pipe.*—Provided for in subheadings 7304.10.1020, 7304.10.1030, 7304.10.1045, 7304.10.1060, 7304.10.1080, 7304.10.5020, 7304.10.5050, 7304.10.5080, 7305.11.1030, 7305.11.1060, 7305.11.5000, 7305.12.1030, 7305.12.1060, 7305.12.5000, 7305.19.1030, 7305.19.1060, 7305.19.5000, 7306.10.1010, 7306.10.1050, 7306.10.5010, 7306.10.5050 of the HTS. Line pipe is included in AISI product group No. 20.

Exports of line pipe are provided for in Schedule B subheadings 7304.10.1020, 7304.10.1050, 7304.10.1080, 7304.10.5020, 7304.10.5050, 7304.10.5080, 7305.11.1000, 7305.11.5000, 7305.12.1000, 7305.12.5000, 7305.19.1000, 7305.19.5000, 7306.10.1000, 7306.10.5000.

(iii) *Mechanical pipe.*—Provided for in subheadings 7304.31.3000, 7304.31.6050, 7304.39.0028, 7304.39.0032, 7304.39.0040, 7304.39.0044, 7304.39.0052, 7304.39.0056, 7304.39.0068, 7304.39.0072, 7304.51.1000, 7304.51.5060, 7304.59.1000, 7304.59.6000, 7304.59.8020, 7304.59.8025, 7304.59.8035, 7304.59.8040, 7304.59.8050, 7304.59.8055, 7304.59.8065, 7304.59.8070, 7304.90.5000, 7304.90.7000, 7306.30.1000, 7306.30.5015, 7306.30.5020, 7306.30.5035, 7306.50.1000, 7306.50.5030, 7306.50.5050, 7306.50.5070, 7306.60.5000, 7306.60.7000 of the HTS. Mechanical pipe is included in AISI product group No. 21A.

(iv) *Structural pipe.*—Provided for in subheadings 7304.90.1000, 7304.90.3000, 7305.31.2000, 7305.31.4000, 7305.31.6000, 7306.30.3000, 7306.50.3000, 7306.60.1000, 7306.60.3000 of the HTS. Structural pipe is included in AISI product group No. 22A.

(v) *Pressure tubing.*—Provided for in subheadings 7304.31.6010, 7304.39.0002, 7304.39.0004, 7304.39.0006, 7304.39.0008, 7304.51.5015, 7304.51.5045, 7304.59.2030, 7304.59.2040, 7304.59.2045, 7304.59.2055, 7304.59.2060, 7304.59.2070, 7304.59.2080, 7306.30.5010, 7306.50.5010 of the HTS. Pressure tubing is included in AISI product group No. 21B.

(vi) *Stainless steel pipes and tubes.*—Provided for in subheadings 7304.41.0005, 7304.41.0015, 7304.41.0045, 7304.49.0005, 7304.49.0015, 7304.49.0045, 7304.49.0060, 7306.40.1000, 7306.40.5005, 7306.40.5015, 7306.40.5045, 7306.40.5060, 7306.40.5075 of the *HTS*. Stainless steel pipes and tubes are included in AISI product group Nos. 21C and 21D.

Exports of stainless steel pipes and tubes are provided for in Schedule B subheadings 7304.41.0000, 7304.49.0010, 7304.49.0040, 7306.40.1000, 7306.40.5000.

(vii) *Other, including standard.*—Provided for in subheadings 7304.39.0016, 7304.39.0020, 7304.39.0024, 7304.39.0036, 7304.39.0048, 7304.39.0062, 7304.39.0076, 7304.39.0080, 7304.39.0090, 7304.51.5005, 7304.59.8010, 7304.59.8015, 7304.59.8030, 7304.59.8045, 7304.59.8060, 7304.59.8080, 7305.39.1000, 7305.39.5000, 7305.90.1000, 7305.90.5000, 7306.30.5025, 7306.30.5028, 7306.30.5032, 7306.30.5040, 7306.30.5055, 7306.30.5085, 7306.30.5090, 7306.90.1000, 7306.90.5000 of the HTS. Other, including standard pipe is included in AISI product group Nos. 18, 21E, and 22B.

Exports of other pipes and tubes, including mechanical, structural, pressure, and standard are provided for in Schedule B subheadings 7304.31.0000, 7304.39.0000, 7304.51.0000, 7304.59.0000, 7304.90.4000, 7304.90.6000, 7305.31.2000, 7305.31.4000, 7305.31.6000, 7305.39.1000, 7305.39.5000, 7305.90.1000, 7305.90.5000, 7306.30.1000, 7306.30.1500, 7306.50.1000, 7306.50.4500, 7306.60.2500, 7306.60.6500, 7306.90.1000, 7306.90.5000.

16. *Alloy tool steel* (all forms).—Provided for in subheadings 7224.10.0045, 7224.90.0015, 7224.90.0025, 7224.90.0035, 7225.20.0000, 7225.30.1000, 7225.30.5060, 7225.40.1090, 7225.40.5060, 7225.50.1060, 7226.20.0000, 7226.91.0500, 7226.91.1560, 7226.91.2560, 7226.92.1060, 7226.92.3060, 7227.10.0000, 7227.90.1060, 7227.90.2060, 7228.10.0010, 7228.10.0030, 7228.10.0060, 7228.30.4000, 7228.30.6000, 7228.50.1020, 7228.50.1040, 7228.50.1060, 7228.50.1080, 7228.60.1060, 7229.10.0000 of the HTS. Alloy tool steel is included in AISI product group No. 17.

Exports of alloy tool steel (all forms) are provided for in Schedule B subheadings 7225.20.0000, 7226.20.0000, 7226.92.2000, 7227.10.0000, 7228.10.0000, 7228.30.5000, 7228.50.1000, 7228.60.1000, 7229.10.0000.

Please refer to appendix A, Notes on Product Coverage and Methodology, for further explanation.

APPENDIX E
Status of Recent Unfair Trade Cases on Steel Products and Raw Materials

Table E-1
Status of recent unfair trade cases on steel products and raw materials

Product description	Country	AD (731-TA)	CVD (701-TA)	USITC preliminary determination		USITC final determination	
				Date[1]	Outcome	Date[1]	Outcome
Certain carbon steel buttweld pipe fittings	China	520		7-8-91	A	6-24-92	A
	Thailand	521		7-8-91	A	6-24-92	A
Certain circular, welded nonalloy steel pipes and tubes	Brazil	532		11-8-91	A	10-26-92	A
	Korea	533		11-8-91	A	10-26-92	A
	Mexico	534		11-8-91	A	10-26-92	A
	Romania	535		11-8-91	A	10-26-92	N
	Taiwan	536		11-8-91	A	10-26-92	A
	Venezuela	537		11-8-91	A	10-26-92	A
Certain welded stainless steel pipes	Korea	540		1-2-92	A	12-18-92	A
	Taiwan	541		1-2-92	A	12-18-92	A
Steel wire rope	Korea	546		5-26-92	A	3-15-93	A
	Mexico	547		5-26-92	A	3-15-93	A
Certain hot-rolled lead and bismuth carbon steel products	Brazil	552	314	5-28-92	A	3-10-93	A
	France	553	315	5-28-92	A	3-10-93	A
	Germany	554	316	5-28-92	A	3-10-93	A
	United Kingdom	555	317	5-28-92	A	3-10-93	A
New steel rails	Japan	557		6-15-92	N		
	Luxembourg	558		6-15-92	N		
	United Kingdom	559		6-15-92	A	3-26-93	N
Certain stainless steel buttweld pipe fittings	Korea	563		7-6-92	A	2-16-93	A
	Taiwan	564		7-6-92	A	6-3-93	A
Ferrosilicon	Argentina	565		7-6-92	A	(2)	
	Kazakhstan	566		7-6-92	A	3-23-93	A
	China	567		7-6-92	A	3-4-93	A
	Russia	568		7-6-92	A	6-16-93	A
	Ukraine	569		7-6-92	A	3-23-93	A
	Venezuela	570		7-6-92	A	6-16-93	A
	Brazil	641		2-23-93	A		
	Egypt	642		2-23-93	A	10-22-93	
Special quality carbon and certain alloy hot-rolled steel bars and rods and semi-finished products	Brazil	572		7-24-92	A	7-9-93	N

See footnotes at end of table.

Table E-1—Continued
Status of recent unfair trade cases on steel products and raw materials

Product description	Country	AD (731-TA)	CVD (701-TA)	USITC preliminary determination		USITC final determination	
				Date[1]	Outcome	Date[1]	Outcome
Certain hot-rolled carbon steel flat products	Belgium	588	329	8-14-92	A	8-9-93	N
	Brazil	589	330	8-14-92	A	8-9-93	N
	Canada	590			A	8-9-93	N
	France	591	331	8-14-92	A	8-9-93	N
	Germany	592	332	8-14-92	A	8-9-93	N
	Italy	593	333	8-14-92	N		
	Japan	594		8-14-92	A	8-9-93	N
	Korea	595	334	8-14-92	A	8-9-93	N
	Netherlands	596		8-14-92	A	8-9-93	N
	New Zealand		335	8-14-92	N		
Cold-rolled carbon steel flat products	Argentina	597		8-14-92	A	8-9-93	N
	Australia	598		8-14-92	N		
	Austria	599	336	8-14-92	A	8-9-93	N
	Belgium	600	337	8-14-92	A	8-9-93	N
	Brazil	601	338	8-14-92	A	8-9-93	N
	Canada	602		8-14-92	A	8-9-93	N
	France	603	339	8-14-92	A	8-9-93	N
	Germany	604	340	8-14-92	A	8-9-93	A
	Italy	605	341	8-14-92	A	8-9-93	N
	Japan	606		8-14-92	A	8-9-93	N
	Korea	607	342	8-14-92	A	8-9-93	A
	Netherlands	608		8-14-92	A	8-9-93	A
	New Zealand		343	8-14-92	N		
	Spain	609	344	8-14-92	A	8-9-93	N
	Taiwan	610	345	8-14-92	N		
	United Kingdom	611	346	8-14-92	N		
Certain corrosion-resistant carbon steel flat products	Australia	612		8-14-92	A	8-9-93	A
	Brazil	613	347	8-14-92	A	8-9-93	N
	Canada	614		8-14-92	A	8-9-93	A
	France	615	348	8-14-92	A	8-9-93	A
	Germany	616	349	8-14-92	A	8-9-93	A
	Japan	617		8-14-92	A	8-9-93	A
	Korea	618	350	8-14-92	A	8-9-93	A
	Mexico	619	351	8-14-92	A	8-9-93	N
	New Zealand		352	8-14-92	A	8-9-93	N
	Sweden		353	8-14-92	A	8-9-93	N
	Taiwan	620	354	8-14-92	N		
Cut-to-length carbon steel plate	Belgium	573	319	8-14-92	A	8-9-93	A
	Brazil	574	320	8-14-92	A	8-9-93	A
	Canada	575		8-14-92	A	8-9-93	A
	Finland	576		8-14-92	A	8-9-93	A
	France	577	321	8-14-92	A	8-9-93	N
	Germany	578	322	8-14-92	A	8-9-93	A
	Italy	579	323	8-14-92	A	8-9-93	N
	Japan	580		8-14-92	N		
	Korea	581	324	8-14-92	A	8-9-93	N
	Mexico	582	325	8-14-92	A	8-9-93	A
	Poland	583		8-14-92	A	8-9-93	A
	Romania	584		8-14-92	A	8-9-93	A
	Spain	585	326	8-14-92	A	8-9-93	A
	Sweden	586	327	8-14-92	A	8-9-93	A
	United Kingdom	587	328	8-14-92	A	8-9-93	A

See footnotes at end of table.

Table E-1—Continued
Status of recent unfair trade cases on steel products and raw materials

Product description	Country	AD (731-TA)	CVD (701-TA)	USITC preliminary determination		USITC final determination	
				Date[1]	Outcome	Date[1]	Outcome
Compact ductile iron waterworks fittings	China	621		8-24-92	A	8-19-93	A
Stainless steel wire rod	Brazil	636		2-16-93	A	11-23-93	
	France	637		2-16-93	A	11-23-93	
	India	638		2-16-93	A	11-23-93	
Stainless steel flanges	India	639		2-16-93	A	2-2-94	
	Taiwan	640		2-16-93	A	2-2-94	
Welded stainless steel pipe	Malaysia	644		4-2-93	A		
Carbon steel wire rod	Brazil	646		6-7-93	A		
	Canada	647		6-7-93	A		
	Japan	648		6-7-93	A		
	Trinidad and Tobago	649		6-7-93	N		
Class 150 stainless steel threaded pipe fittings	Taiwan	658		9-16-93	A		
Grain-oriented silicon electrical steel	Italy	659	355	10-12-93			
	Japan	660		10-12-93			

[1] Date that the Commission officially reports its determination to the U.S. Department of Commerce. Votes by the Commission take place approximately 1 week prior to the determination date.

[2] The Department of Commerce reached negative preliminary and final determinations with respect to this case resulting in its termination.

APPENDIX F
Statistical Tables on U.S. Shipments of and U.S. Trade in Steel Mill Products and Certain Fabricated Steel Products, 1990-92, January-June 1992, and January-June 1993

Table F-1
Steel mill products[1]: U.S. producers' shipments, by products and grades of steel, 1990-92, Jan.-June 1992, and Jan.-June 1993

(Short tons)

Item	1990	1991	1992	Jan.-June— 1992	Jan.-June— 1993
All grades of steel:					
Semifinished	1,916,575	2,548,961	2,292,847	1,108,536	1,211,063
Plate	5,131,846	4,271,412	4,361,596	3,705,552	2,479,495
Sheet and strip	46,628,513	43,300,206	46,456,874	22,118,279	25,067,330
Bars & certain shapes[2]	14,726,831	12,840,512	13,435,487	6,916,452	7,217,029
Wire rod	4,325,740	4,365,595	4,486,926	2,257,722	2,452,792
Wire	917,950	865,092	880,710	479,153	438,358
Wire products	[3]	[3]	[3]	[3]	[3]
Structural shapes & units	6,092,821	5,675,786	5,716,306	2,819,370	2,809,003
Rails & related products	518,593	486,185	525,582	292,850	366,271
Pipe and tube	4,651,570	4,488,014	4,197,881	2,178,680	2,280,758
Total	84,910,439	78,841,763	82,354,209	41,876,594	44,322,099
Carbon & certain alloy[4] steel:					
Semifinished	1,873,588	2,469,217	2,226,029	1,070,564	1,180,756
Plate	5,016,698	4,174,312	4,266,415	3,609,648	2,423,406
Sheet and strip	45,577,983	42,254,291	45,325,716	21,603,573	24,447,019
Bars & certain shapes	14,531,409	12,654,917	13,236,284	6,816,085	7,114,146
Wire rod	4,291,153	4,331,673	4,457,404	2,241,779	2,440,235
Wire	894,750	841,602	856,252	465,676	424,589
Wire products	[3]	[3]	[3]	[3]	[3]
Structural shapes & units	6,092,821	5,675,786	5,716,306	2,819,370	2,809,003
Rails & related products	518,593	486,185	525,582	292,850	366,271
Pipe and tube	4,610,197	4,453,781	4,166,362	2,160,049	2,267,927
Total	83,407,192	77,341,764	80,776,350	41,079,594	43,473,352
Stainless & alloy tool steel:					
Stainless steel:					
Semifinished	42,987	79,744	66,818	37,972	30,307
Plate	115,148	97,100	95,181	95,904	56,089
Sheet and strip	1,050,530	1,045,915	1,131,158	514,706	620,311
Bars & certain shapes	137,717	134,405	135,293	67,644	70,409
Wire rod	34,587	33,922	29,522	15,943	12,557
Wire	23,200	23,490	24,458	13,477	13,769
Pipe and tube	41,373	34,233	31,519	18,631	12,831
Tool steel (all forms)	57,705	51,190	63,910	32,723	32,474
Total stainless and tool	1,503,247	1,499,999	1,577,859	797,000	848,747

[1] Shipment data compiled byAISI exclude certain fabricated products (wire strand, wire ropes, cables, cordage, and fabricated structural units).

[2] Includes tool steel.

[3] Not applicable.Shipment and apparent consumption data for wire and wire products have been combined and reported in the category designated "wire."

[4] "Certain alloy" refers to alloy steel other than stainless or tool steel.

Source: Compiled from data of the American Iron and Steel Institute (AISI).

Table F-2
Steel mill products and certain fabricated steel products: U.S. imports, by products and grades of steel, 1990-92, Jan.-June 1992, and Jan.-June 1993

(Short tons)

Item	1990	1991	1992	Jan.-June— 1992	Jan.-June— 1993
All grades of steel:					
Semifinished	2,362,820	2,045,572	2,344,321	1,257,818	1,662,677
Plate	933,290	792,605	893,403	427,374	328,624
Sheet and strip	7,697,057	7,107,749	8,793,326	4,117,065	3,385,892
Bars & certain shapes[1]	1,119,085	1,041,496	1,152,617	524,284	647,006
Wire rod	979,241	846,923	1,146,420	623,416	548,715
Wire	432,336	391,804	430,981	220,505	256,824
Wire products	660,325	511,839	586,916	300,448	311,356
Structural shapes & units	1,020,593	604,361	589,613	306,054	377,822
Rails & related products	349,555	303,596	299,418	164,186	136,466
Pipe and tube	2,589,409	2,735,372	1,543,490	856,876	954,438
Total	18,143,711	16,381,316	17,780,504	8,798,023	8,609,820
Carbon & certain alloy[2] steel:					
Semifinished	2,301,998	1,996,610	2,307,144	1,240,846	1,617,141
Plate	922,826	779,002	878,172	418,854	320,226
Sheet and strip	7,524,025	6,930,919	8,567,140	4,011,756	3,211,973
Bars & certain shapes	1,035,255	943,845	1,057,195	480,410	590,509
Wire rod	956,113	821,026	1,106,805	606,598	526,203
Wire	414,008	374,750	411,892	210,836	245,234
Wire products	660,325	511,839	586,916	300,448	311,356
Structural shapes & units	1,020,593	604,361	589,613	306,054	377,822
Rails & related products	349,555	303,596	299,418	164,186	136,466
Pipe and tube	2,542,189	2,687,154	1,500,877	835,515	933,547
Total	17,726,887	15,953,102	17,305,171	8,575,502	8,270,478
Stainless & alloy tool steel:					
Stainless steel:					
Semifinished	60,822	48,962	37,177	16,971	45,536
Plate	10,464	13,602	15,231	8,520	8,399
Sheet and strip	173,033	176,830	226,186	105,308	173,919
Bars & certain shapes	44,526	52,493	57,499	26,079	34,692
Wire rod	23,128	25,897	39,616	16,818	22,512
Wire	18,328	17,054	19,089	9,669	11,590
Pipe and tube	47,220	48,218	42,612	21,361	20,891
Tool steel (all forms)	39,304	45,158	37,923	17,795	21,805
Total stainless and tool	416,824	428,214	475,333	222,521	339,343

[1] Includes tool steel.

[2] "Certain alloy" refers to alloy steel other than stainless or tool steel.

Note.—Imports of steel mill products only (excluding fabricated steel products): 17,336,410 short tons, 1990; 15,748,077 short tons, 1991; 17,062,421 short tons, 1992.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table F-3
Steel mill products and certain fabricated steel products: U.S. exports of domestic merchandise, by products and grades of steel, 1990-92, Jan.-June 1992, and Jan.-June 1993

(Short tons)

Item	1990	1991	1992	Jan.-June— 1992	Jan.-June— 1993
All grades of steel:					
Semifinished	497,199	699,080	422,911	240,663	307,801
Plate	167,416	245,035	172,083	146,324	89,264
Sheet and strip	2,161,482	3,355,880	1,996,522	1,197,501	829,018
Bars & certain shapes[1]	451,278	585,849	536,713	282,572	352,842
Wire rod	106,632	166,455	70,846	42,904	38,999
Wire	70,052	89,415	90,138	38,293	45,778
Wire products	41,548	51,552	56,573	29,281	33,668
Structural shapes & units	495,007	657,019	446,412	253,676	223,936
Rails & related products	379,039	108,056	74,208	41,602	58,146
Pipe and tube	470,779	753,109	679,283	349,033	279,307
Total	4,840,433	6,711,450	4,545,690	2,621,850	2,258,759
Carbon & certain alloy[2] steel:					
Semifinished	515,848	679,017	417,424	237,217	303,568
Plate	133,760	235,842	165,485	141,149	85,725
Sheet and strip	2,099,903	3,257,888	1,918,453	1,156,129	795,691
Bars & certain shapes	428,311	560,268	510,804	270,839	344,022
Wire rod	101,219	162,231	68,590	41,651	37,945
Wire	66,453	86,775	87,957	37,189	44,524
Wire products	41,548	51,552	56,573	29,281	33,868
Structural shapes & units	495,007	657,019	446,412	253,676	223,936
Rails & related products	379,039	108,056	74,208	41,602	58,146
Pipe and tube	457,336	738,176	664,582	341,639	271,556
Total	4,718,426	6,536,824	4,410,489	2,550,372	2,198,782
Stainless & alloy tool steel:					
Stainless steel:					
Semifinished	6,472	20,063	5,487	3,446	4,233
Plate	8,534	9,193	6,598	5,175	3,539
Sheet and strip	63,947	97,991	78,069	41,372	33,327
Bars & certain shapes	16,005	16,989	19,935	8,150	5,414
Wire rod	5,413	4,224	2,256	1,253	1,054
Wire	3,599	2,640	2,181	1,103	1,254
Pipe and tube	13,443	14,934	14,701	7,394	7,751
Tool steel (all forms)	4,594	8,592	5,974	3,583	3,406
Total stainless and tool	122,007	174,626	135,201	71,478	59,977

[1] Includes tool steel.

[2] "Certain alloy" refers to alloy steel other than stainless or tool steel.

Note.—Exports of steel mill products only (excluding fabricated steel products): 4,602,490 short tons, 1990; 6,392,652 short tons, 1991; 4,304,215 short tons, 1992.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table F-4
Steel mill products and certain fabricated steel products: Apparent U.S. consumption, by products and grades of steel, 1990-92, Jan.-June 1992, and Jan.-June 1993

(Short tons)

Item	1990	1991	1992	Jan.-June— 1992	Jan.-June— 1993
All grades of steel:					
Semifinished	3,782,196	3,895,453	4,214,257	2,125,691	2,565,939
Plate	5,897,720	4,818,982	5,082,916	3,986,602	2,718,855
Sheet and strip	52,164,088	47,052,075	53,253,678	25,037,843	27,624,204
Bars & certain shapes[1]	15,394,638	13,296,159	14,051,391	7,158,164	7,511,193
Wire rod	5,198,349	5,046,063	5,562,500	2,838,234	2,962,508
Wire	1,899,011	1,627,768	1,751,896	932,532	927,092
Wire products	[2]	[2]	[2]	[2]	[2]
Structural shapes & units	6,618,407	5,623,128	5,859,507	2,871,748	2,962,889
Rails & related products	489,109	681,725	750,792	415,434	444,591
Pipe and tube	6,770,200	6,470,277	5,062,088	2,686,523	2,955,889
Total	98,213,718	88,511,630	95,589,025	48,052,771	50,673,160
Carbon & certain alloy[3] steel:					
Semifinished	3,659,738	3,786,810	4,115,749	2,074,193	2,494,329
Plate	5,805,764	4,717,472	4,979,102	3,887,353	2,657,907
Sheet and strip	51,002,105	45,927,322	51,974,403	24,459,200	26,863,301
Bars & certain shapes	15,138,353	13,038,494	13,782,675	7,025,656	7,360,633
Wire rod	5,146,047	4,990,468	5,495,619	2,806,726	2,928,493
Wire	1,861,082	1,589,864	1,710,530	910,490	902,987
Wire products	[2]	[2]	[2]	[2]	[2]
Structural shapes & units	6,618,407	5,623,128	5,859,507	2,871,748	2,962,889
Rails & related products	489,109	681,725	750,792	415,434	444,591
Pipe and tube	6,695,050	6,402,759	5,002,657	2,653,925	2,929,918
Total	96,415,655	86,758,042	93,671,034	47,104,725	49,545,048
Stainless & alloy tool steel:					
Stainless steel:					
Semifinished	97,337	108,643	98,508	51,497	71,610
Plate	117,078	101,509	103,814	99,249	60,949
Sheet and strip	1,159,616	1,124,754	1,279,275	578,642	760,903
Bars & certain shapes	166,238	169,909	172,857	85,573	99,687
Wire rod	52,302	55,595	66,882	31,508	34,015
Wire	37,929	37,904	41,366	22,043	24,105
Pipe and tube	75,150	67,517	59,430	32,598	25,971
Tool steel (all forms)	92,415	87,756	95,859	46,935	50,873
Total stainless and tool	1,798,065	1,753,587	1,917,991	948,045	1,128,113

[1] Includes tool steel.

[2] Not applicable.Shipment and apparent consumption data for wire and wire products have been combined and reported in the category designated "wire."

[3] "Certain alloy" refers to alloy steel other than stainless or tool steel.

Note.—Apparent consumption of steel mill products only (excluding fabricated steel products): 97,644,359 short tons, 1990; 88,201,112 short tons, 1991; 95,112,415 short tons, 1992.

Source: Compiled from data of the AISI, and official statistics of the U.S. Department of Commerce.

Table F-5
Steel mill products and certain fabricated steel products: U.S. imports as a percent of apparent consumption, by products and grades of steel, 1990-92, Jan.-June 1992, and Jan.-June 1993

(Short tons)

Item	1990	1991	1992	Jan.-June— 1992	Jan.-June— 1993
All grades of steel:					
Semifinished	62.5	52.5	55.6	59.2	64.8
Plate	15.8	16.4	17.6	10.7	12.1
Sheet and strip	14.8	15.1	16.5	16.4	12.3
Bars & certain shapes[1]	7.3	7.8	8.2	7.3	8.6
Wire rod	18.8	16.8	20.6	22.0	18.5
Wire	57.5	55.5	58.1	55.9	61.3
Wire products	(2)	(2)	(2)	(2)	(2)
Structural shapes & units	15.4	10.7	10.1	10.7	12.8
Rails & related products	71.5	44.5	39.9	39.5	30.7
Pipe and tube	38.2	42.3	30.5	31.9	32.3
Total	18.5	18.5	18.6	18.3	17.0
Carbon & certain alloy[3] steel:					
Semifinished	62.9	52.7	56.1	59.8	64.8
Plate	15.9	16.5	17.6	10.8	12.0
Sheet and strip	14.8	15.1	16.5	16.4	12.0
Bars & certain shapes	6.8	7.2	7.7	6.8	8.0
Wire rod	18.6	16.5	20.1	21.6	18.0
Wire	57.7	55.8	58.4	56.2	61.6
Wire products	(2)	(2)	(2)	(2)	(2)
Structural shapes & units	15.4	10.7	10.1	10.7	12.8
Rails & related products	71.5	44.5	39.9	39.5	30.7
Pipe and tube	38.0	42.0	30.0	31.5	31.9
Total	18.4	18.4	18.5	18.2	16.7
Stainless & alloy tool steel:					
Stainless steel:					
Semifinished	62.5	45.1	37.7	33.0	63.6
Plate	8.9	13.4	14.7	8.6	13.8
Sheet and strip	14.9	15.7	17.7	18.2	22.9
Bars & certain shapes	26.8	30.9	33.3	30.5	34.8
Wire rod	44.2	46.6	59.2	53.4	66.2
Wire	48.3	45.0	46.1	43.9	48.1
Pipe and tube	62.8	71.4	71.7	65.5	80.4
Tool steel (all forms)	42.5	51.5	39.6	37.9	42.9
Total stainless and tool	23.2	24.4	24.8	23.5	30.1

[1] Includes tool steel.

[2] Not applicable. Shipment and apparent consumption data for wire and wire products have been combined and reported in the category designated "wire."

[3] "Certain alloy" refers to alloy steel other than stainless or tool steel.

Note.—U.S. imports as a percent of apparent consumption of steel mill products only (excluding fabricated steel products): 17.8 percent, 1990; 17.9 percent, 1991; 17.9 percent, 1992.

Source: Compiled from data of the AISI, and official statistics of the U.S. Department of Commerce.

Table F-6
Steel mill products and certain fabricated steel products: U.S. imports for consumption, U.S. exports, by selected countries and country groups, 1991, 1992, Jan.-June 1992, and Jan.-June 1993

(Short tons)

Item	1991	1992	Jan.-June— 1992	Jan.-June— 1993
U.S. imports for consumption:				
Canada	3,189,823	4,493,860	2,181,947	2,700,986
Japan	2,880,969	2,716,559	1,288,053	943,685
Korea	1,583,466	1,759,996	801,897	573,373
Brazil	1,321,907	1,565,028	837,388	473,521
Germany	1,448,397	1,383,401	716,379	566,737
France	929,415	962,084	498,501	368,150
United Kingdom	626,679	619,573	331,821	290,930
Netherlands	494,184	563,949	273,018	264,177
Mexico	534,216	456,236	244,663	392,769
Belgium	452,790	397,624	185,313	222,924
Australia	368,973	369,910	193,102	212,597
Sweden	302,844	343,420	187,825	171,507
Italy	330,724	267,509	167,915	260,851
Republic of South Africa	415	254,958	92,199	199,316
Spain	222,981	212,128	87,082	109,323
All others	1,693,533	1,414,271	710,921	858,977
Total	16,381,316	17,780,504	8,798,023	8,609,820
East Asia	4,689,214	4,680,736	2,181,626	1,604,830
EC-12	4,749,489	4,627,807	2,376,762	2,234,794
Eastern Europe	201,883	110,322	45,832	33,144
LAIA[1]	2,184,428	2,215,447	1,177,258	1,002,234
U.S. exports:				
Canada	1,729,394	1,481,796	797,646	862,927
Mexico	1,370,880	1,464,634	774,536	547,542
Japan	704,128	134,455	89,714	45,566
Korea	874,556	131,095	107,216	7,419
China	100,367	97,331	52,474	80,546
Thailand	37,506	81,927	51,875	16,718
Ecuador	32,850	71,428	36,252	47,827
Colombia	14,971	66,597	36,680	23,868
United Kingdom	47,017	66,152	32,419	19,754
Venezuela	117,485	61,268	38,878	13,064
All others	1,682,296	889,007	385,336	593,528
Total	6,711,450	4,545,690	2,403,025	2,258,759
East Asia	2,435,240	643,201	392,773	437,732
EC-12	273,576	201,201	91,915	78,560
Eastern Europe	2,244	3,672	2,589	2,574
LAIA[1]	1,596,980	1,735,554	920,075	664,500

[1] Latin American Integration Association.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table F-7
Carbon and certain alloy[1] semifinished steel: U.S. imports for consumption, U.S. exports, by selected countries and country groups, 1991, 1992, Jan.-June 1992, and Jan.-June 1993

(Short tons)

Item	1991	1992	Jan.-June— 1992	Jan.-June— 1993
U.S. imports for consumption:				
Brazil	704,348	967,561	484,096	338,852
Germany	244,191	282,030	136,935	207,446
United Kingdom	212,479	223,297	139,425	72,756
Canada	82,534	177,583	72,746	134,855
Australia	160,936	149,901	97,889	150,006
Mexico	201,417	124,381	73,540	224,698
Belgium	60,690	97,312	43,065	98,492
Sweden	90,597	76,174	52,237	59,862
Netherlands	63,861	69,044	34,112	57,609
Venezuela	0	44,130	22,142	16,447
France	125,539	39,083	34,253	141,836
Finland	46,472	31,939	25,916	16,377
Korea	0	21,666	21,666	0
Norway	0	2,687	2,687	0
Slovenia	0	187	0	0
All others	3,545	170	138	97,906
Total	1,996,610	2,307,144	1,240,846	1,617,141
East Asia	3,451	21,688	21,673	53
EC-12	706,828	710,791	387,815	674,775
Eastern Europe	0	0	0	1,165
LAIA[2]	905,765	1,136,072	579,778	579,997
U.S. exports:				
Mexico	58,606	169,090	82,020	51,125
Ecuador	11,869	58,739	33,872	40,905
Canada	64,671	30,603	14,297	32,780
Taiwan	184,829	23,917	23,137	133,250
Singapore	3,565	21,008	86	119
Colombia	360	19,523	12,763	90
Hong Kong	2,255	16,951	79	201
Guatemala	4,601	9,480	2,578	868
France	18,274	6,923	1,167	792
Japan	54,715	6,606	312	334
All others.	275,271	54,586	30,879	43,103
Total	679,017	417,424	201,189	303,568
East Asia	374,529	75,978	30,364	163,723
EC-12	40,556	23,087	6,935	5,152
Eastern Europe	2	14	14	0
LAIA[2]	76,435	252,335	131,569	92,656

[1] "Certain alloy" refers to alloy steel other than stainless or tool steel.
[2] Latin American Integration Association.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table F-8
Carbon and certain alloy[1] steel plate[2]: U.S. imports for consumption, U.S. exports, by selected countries and country groups, 1991, 1992, Jan.-June 1992, and Jan.-June 1993

(Short tons)

Item	1991	1992	Jan.-June— 1992	Jan.-June— 1993
U.S. imports for consumption:				
Canada	92,872	202,904	90,121	44,777
Sweden	87,154	113,894	67,199	21,223
Republic of South Africa	0	79,295	30,189	57,555
Belgium	97,096	62,666	30,555	33,935
Mexico	19,343	59,997	34,026	159
Spain	69,560	54,674	17,905	980
Brazil	73,958	50,508	36,050	5,669
Finland	55,762	47,579	32,694	14,555
Germany	47,197	31,478	17,637	9,758
Poland	38,357	24,605	8,198	0
United Kingdom	35,843	22,391	12,991	1,186
India	0	18,124	0	47,549
Macedonia	0	18,115	7	8,792
Romania	36,428	18,078	7,934	2
France	20,064	14,696	7,041	4,676
All others	105,368	59,169	26,307	69,410
Total	779,002	878,172	418,854	320,226
East Asia	42,611	20,243	8,240	12,496
EC-12	291,632	193,350	92,091	55,344
Eastern Europe	106,306	47,924	20,586	1,719
LAIA[3]	93,301	110,505	70,076	6,167
U.S. exports:				
Mexico	37,765	66,617	38,167	19,599
Canada	79,648	54,275	30,904	38,253
Korea	33,687	17,716	17,465	825
Venezuela	534	10,885	10,494	12
Japan	47,684	6,119	28	6,055
Taiwan	11,436	4,595	214	17,960
Thailand	4,639	1,732	1,004	0
Guyana	45	354	16	351
Surinam	209	295	194	353
Jamaica	237	262	82	216
All others	19,959	2,635	942	2,101
Total	235,842	165,485	99,511	85,725
East Asia	112,521	30,245	18,795	25,047
EC-12	1,310	263	54	218
Eastern Europe	33	0	0	0
LAIA[3]	40,132	77,947	48,986	20,125

[1] "Certain alloy" refers to alloy steel other than stainless or tool steel.
[2] Excluding coiled plate. See app. A for details.
[3] Latin American Integration Association.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table F-9
Carbon and certain alloy[1] steel sheet and strip[2]: U.S. imports for consumption, U.S. exports, by selected countries and country groups, 1991, 1992, Jan.-June 1992, and Jan.-June 1993

(Short tons)

Item	1991	1992	Jan.-June— 1992	Jan.-June— 1993
U.S. imports for consumption:				
Canada	1,158,944	1,933,969	916,671	1,200,361
Japan	1,655,243	1,796,481	807,809	429,985
Korea	953,719	1,239,400	521,571	285,176
Germany	684,639	777,922	407,933	248,047
France	501,952	657,044	324,672	79,156
Netherlands	416,072	478,970	228,657	190,058
Brazil	254,375	313,010	187,253	16,096
Italy	173,042	202,651	135,001	98,076
Australia	182,149	197,748	85,390	43,512
Belgium	209,306	143,226	56,247	26,916
Republic of South Africa	0	130,982	42,676	110,536
Mexico	88,650	113,764	51,845	54,912
Finland	81,194	94,010	40,785	61,683
Sweden	50,893	82,582	31,377	46,468
New Zealand	68,833	80,810	48,365	26,537
All others	451,908	324,571	125,504	294,453
Total	6,930,919	8,567,140	4,011,756	3,211,973
East Asia	2,662,545	3,073,699	1,341,334	733,042
EC-12	2,144,354	2,429,159	1,228,603	784,507
Eastern Europe	15,448	38,611	7,330	20,335
LAIA[3]	467,724	471,219	252,222	126,046
U.S. exports:				
Mexico	743,429	751,139	413,954	263,804
Canada	732,203	650,698	344,090	353,776
Japan	527,868	110,320	86,694	34,143
Korea	658,569	74,489	54,947	1,147
Italy	43,004	43,279	13,283	16,351
Republic of South Africa	10,969	42,390	620	849
Hong Kong	28,667	40,091	15,858	17,579
Thailand	22,535	34,219	26,288	4,144
Pakistan	18,099	20,571	8,417	9,197
Brazil	5,446	18,923	7,912	8,672
All others	467,098	132,334	75,272	86,028
Total	3,257,888	1,918,453	1,047,334	795,691
East Asia	1,536,791	284,435	198,566	95,291
EC-12	99,314	62,669	25,216	27,293
Eastern Europe	152	344	344	19
LAIA[3]	803,492	809,943	444,498	286,755

[1] "Certain alloy" refers to alloy steel other than stainless or tool steel.
[2] Including coiled plate. See app. A for details.
[3] Latin American Integration Association.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table F-10
Carbon and certain alloy[1] steel bars and light shapes: U.S. imports for consumption, U.S. exports, by selected countries and country groups, 1991, 1992, Jan.-June 1992, and Jan.-June 1993

(Short tons)

Item	1991	1992	Jan.-June— 1992	Jan.-June— 1993
U.S. imports for consumption:				
Canada	341,964	512,747	240,124	361,257
United Kingdom	159,667	139,106	51,055	61,841
Japan	84,049	86,218	43,400	34,772
France	68,718	60,035	31,345	21,518
Turkey	27,370	60,002	22,400	26,553
Brazil	85,635	55,550	28,794	16,536
Germany	48,104	52,893	16,450	10,319
Venezuela	21,847	17,657	8,793	3,311
Trinidad andTobago	8,520	11,461	4,477	5,491
India	5,740	10,687	5,242	8,335
Spain	10,259	9,598	5,357	5,049
Korea	20,105	8,332	4,462	3,984
Mexico	11,194	7,254	5,786	6,675
Sweden	5,775	5,472	3,645	4,015
Italy	1,265	4,628	676	1,959
All others	43,634	15,557	8,404	18,894
Total	943,845	1,057,195	480,410	590,509
East Asia	110,440	99,060	50,568	39,305
EC-12	292,972	270,071	107,438	106,811
Eastern Europe	730	344	215	21
LAIA[2]	146,281	80,836	43,747	27,405
U.S. exports:				
Canada	226,334	195,480	101,307	134,398
Mexico	171,716	158,183	90,241	66,727
Korea	1,188	27,197	26,749	971
Thailand	21	24,259	15,924	11,424
Guatemala	8,468	16,113	8,641	7,845
China	86	11,220	173	44,714
Taiwan	904	7,879	528	16,891
Malaysia	143	7,324	2,714	3,492
Ecuador	50	6,770	10	58
Colombia	2,153	6,721	6,384	980
All others	149,205	49,657	20,616	56,522
Total	560,268	510,804	273,287	344,022
East Asia	28,050	79,835	47,324	102,972
EC-12	7,242	6,988	3,817	7,655
Eastern Europe	110	61	52	1
LAIA[2]	180,199	178,583	99,907	71,223

[1] "Certain alloy" refers to alloy steel other than stainless or tool steel.
[2] Latin American Integration Association.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table F-11
Carbon and certain alloy[1] steel wire rod: U.S. imports for consumption, U.S. exports, by selected countries and country groups, 1991, 1992, Jan.-June 1992, and Jan.-June 1993

(Short tons)

Item	1991	1992	Jan.-June— 1992	Jan.-June— 1993
U.S. imports for consumption:				
Canada	378,768	505,521	266,207	254,049
Japan	193,795	229,977	112,766	120,791
Brazil	19,547	90,035	55,687	21,860
Trinidad and Tobago	45,466	80,986	42,528	51,333
France	50,167	53,781	25,877	44,812
Turkey	64,336	52,693	52,638	55
Germany	17,051	30,813	10,320	8,177
Luxembourg	12,401	18,744	8,447	1,641
Venezuela	5,467	14,925	14,925	0
Australia	16,836	11,128	4,852	4,438
United Kingdom	705	6,310	6,282	455
Sweden	8,672	5,093	3,148	1,255
Spain	471	2,578	1,459	585
Belgium	126	1,357	200	11,194
Italy	2,070	1,226	396	1,227
All others	5,148	1,637	867	4,332
Total	821,026	1,106,805	606,598	526,203
East Asia	194,490	230,639	113,120	121,143
EC-12	83,344	115,422	53,197	72,069
Eastern Europe	0	0	0	0
LAIA[2]	29,080	104,989	70,617	21,860
U.S. exports:				
Mexico	51,094	35,768	12,057	22,701
Canada	54,997	23,842	13,539	10,451
Japan	63	5,730	24	32
Venezuela	1,094	1,270	945	326
Guatemala	1,998	678	678	68
Argentina	1	381	359	63
United Kingdom	102	129	56	18
Singapore	3,792	108	108	0
Colombia	2	106	106	2
Korea	24,557	94	29	408
All others	24,532	484	292	3,874
Total	162,231	68,590	28,192	37,945
East Asia	42,925	6,068	215	3,794
EC-12	541	214	125	173
Eastern Europe	0	0	0	0
LAIA[2]	60,630	37,543	13,482	23,102

[1] "Certain alloy" refers to alloy steel other than stainless or tool steel.
[2] Latin American Integration Association.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table F-12
Carbon and certain alloy[1] steel wire: U.S. imports for consumption, U.S. exports, by selected countries and country groups, 1991, 1992, Jan.-June 1992, and Jan.-June 1993

(Short tons)

Item	1991	1992	Jan.-June— 1992	Jan.-June— 1993
U.S. imports for consumption:				
Canada	153,425	182,612	90,761	117,170
Japan	59,440	64,382	31,769	34,899
Belgium	33,139	36,734	20,806	20,234
France	24,759	28,062	15,728	15,366
United Kingdom	15,959	16,648	8,341	9,114
Germany	11,351	11,905	6,611	5,151
Taiwan	10,308	11,835	6,471	5,421
Brazil	13,397	9,962	4,972	6,080
China	7,418	7,397	4,015	3,830
Sweden	7,738	7,119	4,173	4,534
Venezuela	8,124	6,645	3,577	3,069
India	6,653	5,300	3,338	3,651
Australia	4,880	3,840	1,889	1,525
Korea	4,944	3,525	1,461	3,742
Mexico	3,977	2,799	1,414	1,494
All others	9,239	13,127	5,510	9,954
Total	374,750	411,892	210,836	245,234
East Asia	82,454	87,910	44,021	48,390
EC-12	88,833	97,861	53,878	53,467
Eastern Europe	215	223	167	162
LAIA[2]	28,282	21,997	10,534	12,896
U.S. exports:				
Canada	33,308	39,994	20,093	23,500
Mexico	18,163	25,919	10,115	14,095
China	56	10,651	47	8
Jamaica	524	1,394	676	180
Germany	1,091	867	487	603
United Kingdom	1,345	696	274	493
Bangladesh	0	692	692	168
Brazil	3,987	687	468	808
Romania	985	677	677	0
Costa Rica	792	594	203	418
All others	26,525	5,787	2,209	4,252
Total	86,775	87,957	35,942	44,524
East Asia	22,932	11,768	569	1,230
EC-12	2,820	2,391	1,047	1,410
Eastern Europe	985	682	681	25
LAIA[2]	22,628	27,363	10,733	16,259

[1] "Certain alloy" refers to alloy steel other than stainless or tool steel.
[2] Latin American Integration Association.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table F-13
Carbon and certain alloy[1] steel wire products: U.S. imports for consumption, U.S. exports, by selected countries and country groups, 1991, 1992, Jan.-June 1992, and Jan.-June 1993

(Short tons)

Item	1991	1992	Jan.-June— 1992	Jan.-June— 1993
U.S. imports for consumption:				
Korea	155,381	164,631	83,112	89,866
Canada	97,098	102,061	53,585	56,106
Japan	41,508	48,096	23,847	26,932
China	23,727	47,279	25,116	15,834
Mexico	26,959	27,825	16,965	13,075
Indonesia	14,540	26,684	12,986	9,246
Spain	16,375	25,263	11,998	14,376
Taiwan	11,071	14,592	7,144	7,797
Italy	12,639	13,303	8,183	8,557
Brazil	11,622	13,258	6,624	9,564
Belgium	10,201	12,905	6,709	8,462
France	8,655	11,076	5,935	5,061
Turkey	6,891	9,703	4,081	5,077
Germany	6,222	7,899	4,033	3,291
Poland	10,354	7,351	4,178	3,646
All others	58,597	54,991	25,951	34,466
Total	511,839	586,916	300,448	311,356
East Asia	249,162	305,438	154,270	153,123
EC-12	63,172	79,239	41,799	44,634
Eastern Europe	12,840	8,506	5,206	4,616
LAIA[2]	54,541	53,852	29,189	30,119
U.S. exports:				
Canada	21,473	28,376	13,910	17,230
Mexico	9,620	6,584	3,728	5,931
Philippines	212	1,879	1,513	88
Panama	760	1,664	792	1,695
Costa Rica	1,094	1,119	596	185
Bahamas	778	1,061	579	565
Dominican Republic	392	988	285	665
Chile	536	935	468	434
Taiwan	214	827	308	76
Singapore	509	816	539	244
All others	15,964	12,326	6,096	6,556
Total	51,552	56,573	28,814	33,668
East Asia	2,437	4,401	2,868	1,088
EC-12	3,185	2,086	1,020	985
Eastern Europe	33	22	14	10
LAIA[2]	12,654	9,644	5,226	7,309

[1] "Certain alloy" refers to alloy steel other than stainless or tool steel.
[2] Latin American Integration Association.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table F-14
Carbon and certain alloy[1] steel structural shapes and units: U.S. imports for consumption, U.S. exports, by selected countries and country groups, 1991, 1992, Jan.-June 1992, and Jan.-June 1993

(Short tons)

Item	1991	1992	Jan.-June— 1992	Jan.-June— 1993
U.S. imports for consumption:				
Canada	217,538	233,622	118,559	137,661
Luxembourg	88,005	101,856	57,840	58,245
United Kingdom	82,168	69,872	28,951	60,173
Japan	48,069	44,362	28,004	22,431
Belgium	22,295	32,745	21,569	16,106
Germany	19,376	26,210	13,114	15,826
Spain	41,845	19,445	10,414	21,691
France	8,512	16,000	5,206	9,979
Republic of South Africa	299	15,266	5,406	5,603
Mexico	13,031	8,936	4,106	11,617
Brazil	10,883	5,735	4,713	1,931
Poland	24,309	3,231	3,166	4,178
Korea	12,012	2,967	1,614	701
New Zealand	943	2,497	959	442
Saudi Arabia	0	1,350	0	0
All others	15,076	5,519	2,433	11,237
Total	604,361	589,613	306,054	377,822
East Asia	63,441	49,265	30,692	23,934
EC-12	263,352	267,931	137,619	183,400
Eastern Europe	24,371	3,231	3,166	4,235
LAIA[2]	31,620	14,937	8,894	14,126
U.S. exports:				
Canada	202,996	139,901	75,019	71,843
Mexico	120,608	133,102	62,403	56,600
United Kingdom	13,166	27,140	12,160	6,201
Thailand	2,671	19,990	7,933	455
Venezuela	8,477	13,780	6,114	3,348
Saudi Arabia	18,735	10,846	4,986	2,313
Singapore	25,848	9,220	7,576	1,999
Panama	5,901	7,313	4,458	5,570
Nigeria	33,443	7,184	6,501	1,090
Korea	55,892	6,637	5,080	1,534
All others	169,282	71,300	30,434	72,983
Total	657,019	446,412	222,665	223,936
East Asia	173,428	50,577	28,161	24,475
EC-12	36,435	34,839	14,979	12,791
Eastern Europe	655	68	54	34
LAIA[2]	133,113	152,611	71,065	71,649

[1] "Certain alloy" refers to alloy steel other than stainless or tool steel.
[2] Latin American Integration Association.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table F-15
Carbon and certain alloy[1] steel rails and related products: U.S. imports for consumption, U.S. exports, by selected countries and country groups, 1991, 1992, Jan.-June 1992, and Jan.-June 1993

(Short tons)

Item	1991	1992	Jan.-June— 1992	Jan.-June— 1993
U.S. imports for consumption:				
Canada	144,179	133,453	57,753	56,327
Japan	97,927	79,538	52,276	64,419
United Kingdom	17,636	30,948	23,559	333
Luxembourg	18,162	23,979	8,181	6,343
Austria	3,642	7,505	5,050	1,204
Germany	7,791	7,069	5,635	1,892
France	2,872	5,336	5,261	634
Korea	3,609	3,312	2,088	807
Brazil	1,272	2,770	1,253	1,397
Australia	1,324	1,769	1,175	371
Honduras	0	644	387	78
Israel	185	620	474	43
Poland	6	454	207	400
Italy	461	368	186	200
Belgium	191	321	242	335
All others	4,339	1,332	458	1,685
Total	303,596	299,418	164,186	136,466
East Asia	101,908	83,125	54,471	65,392
EC-12	47,188	68,024	43,068	9,736
Eastern Europe	46	455	208	400
LAIA[2]	4,510	3,230	1,369	2,504
U.S. exports:				
Canada	25,407	32,837	18,608	33,116
Mexico	63,187	29,051	15,329	14,801
Egypt	4,345	3,602	2,235	2,783
Peru	1,017	1,128	21	1,230
Venezuela	1,701	920	635	140
Belize	587	912	529	685
Taiwan	152	805	22	690
Guyana	0	465	0	538
United Kingdom	104	437	238	143
Australia	896	412	322	677
All others	10,659	3,639	2,007	3,343
Total	108,056	74,208	39,946	58,146
East Asia	1,621	1,506	554	1,225
EC-12	684	1,152	529	793
Eastern Europe	55	8	0	0
LAIA[2]	67,276	31,731	16,307	16,955

[1] "Certain alloy" refers to alloy steel other than stainless or tool steel.
[2] Latin American Integration Association.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table F-16
Carbon and certain alloy[1] steel pipe and tube: U.S. imports for consumption, U.S. exports, by selected countries and country groups, 1991, 1992, Jan.-June 1992, and Jan.-June 1993

(Short tons)

Item	1991	1992	Jan.-June— 1992	Jan.-June— 1993
U.S. imports for consumption:				
Canada	473,741	459,583	252,306	295,008
Korea	397,957	287,013	151,959	170,408
Japan	579,441	263,132	138,379	152,832
Germany	334,299	120,549	81,553	36,268
Mexico	133,064	68,642	34,010	47,630
Argentina	71,650	45,992	24,312	40,657
Brazil	138,046	43,673	20,616	47,869
France	82,614	30,827	22,921	16,832
United Kingdom	14,188	23,899	15,863	8,412
Thailand	6,519	20,466	1,875	11,469
Republic of South Africa	0	20,059	9,276	16,430
Italy	101,440	18,917	10,524	33,372
Spain	25,830	11,398	7,297	11,703
Sweden	9,902	10,733	5,832	6,887
Netherlands	7,919	9,055	6,600	5,240
All others	310,544	66,940	52,194	32,530
Total	2,687,154	1,500,877	835,515	933,547
East Asia	1,053,805	581,110	301,259	336,681
EC-12	616,761	227,256	156,521	119,456
Eastern Europe	39,145	10,840	8,868	321
LAIA[2]	381,849	162,346	80,592	140,979
U.S. exports:				
Canada	247,967	244,367	147,762	121,300
China	93,475	66,293	48,107	2,532
Mexico	41,690	42,937	21,793	25,266
Russia	0	34,342	195	23,012
Colombia	6,995	29,614	13,610	14,479
Algeria	43,178	22,560	12,039	3,290
Saudi Arabia	19,591	19,824	11,968	1,504
Venezuela	71,970	19,119	11,368	3,595
Nigeria	24,493	15,460	11,115	1,921
United Kingdom	8,282	13,154	8,930	5,167
All others	180,534	156,912	75,002	69,489
Total	738,176	664,582	361,890	271,556
East Asia	113,178	88,451	60,360	10,601
EC-12	50,794	46,958	29,555	14,015
Eastern Europe	174	2,454	1,417	2,416
LAIA[2]	140,473	106,071	51,266	49,368

[1] "Certain alloy" refers to alloy steel other than stainless or tool steel.
[2] Latin American Integration Association.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table F-17
Total, carbon and certain alloy[1] steel products: U.S. imports for consumption, U.S. exports, by selected countries and country groups, 1991, 1992, Jan.-June 1992, and Jan.-June 1993

(Short tons)

Item	1991	1992	Jan.-June— 1992	Jan.-June— 1993
U.S. imports for consumption:				
Canada	3,141,061	4,444,054	2,158,833	2,657,568
Japan	2,790,348	2,622,861	1,244,021	896,053
Korea	1,562,912	1,739,892	790,406	558,241
Brazil	1,313,084	1,552,062	830,058	465,854
Germany	1,420,222	1,348,768	700,221	546,176
France	893,852	915,940	478,238	339,870
United Kingdom	600,606	597,606	320,828	266,570
Netherlands	493,465	563,182	272,706	263,472
Mexico	501,740	413,781	221,756	360,302
Belgium	443,048	389,542	180,839	217,783
Australia	368,963	369,906	193,098	212,581
Sweden	263,341	303,499	168,929	145,639
Republic of South Africa	413	248,381	88,929	192,165
Italy	312,350	247,679	159,812	242,676
Finland	187,846	178,091	103,592	94,667
All others	1,659,852	1,369,925	663,236	810,860
Total	15,953,102	17,305,171	8,575,502	8,270,478
East Asia	4,564,307	4,552,176	2,119,647	1,533,560
EC-12	4,598,435	4,459,103	2,302,028	2,104,199
Eastern Europe	199,101	110,133	45,746	32,972
LAIA[2]	2,142,954	2,159,982	1,147,019	962,099
U.S. exports:				
Canada	1,689,005	1,440,372	779,529	836,647
Mexico	1,315,877	1,418,389	749,807	540,648
Japan	701,950	132,888	88,834	43,694
Korea	861,243	129,506	106,430	6,449
China	100,217	97,126	52,446	79,568
Thailand	37,057	81,640	51,666	16,553
Ecuador	32,785	71,372	36,222	47,776
Colombia	14,152	66,067	36,395	23,423
Hong Kong	46,844	59,549	17,649	46,330
Venezuela	115,551	59,074	37,951	12,233
All others	1,622,142	854,505	381,840	545,461
Total	6,536,824	4,410,489	2,338,769	2,198,782
East Asia	2,408,414	633,263	387,776	429,446
EC-12	242,881	180,649	83,278	70,484
Eastern Europe	2,198	3,653	2,576	2,505
LAIA[2]	1,537,031	1,683,771	893,038	655,400

[1] "Certain alloy" refers to alloy steel other than stainless or tool steel.
[2] Latin American Integration Association.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table F-18
Stainless semifinished steel: U.S. imports for consumption, U.S. exports, by selected countries and country groups, 1991, 1992, Jan.-June 1992, and Jan.-June 1993

(Short tons)

Item	1991	1992	Jan.-June— 1992	Jan.-June— 1993
U.S. imports for consumption:				
Canada	21,273	19,831	9,821	21,033
Sweden	14,318	11,385	4,551	8,233
Germany	1,012	2,783	1,228	1,966
Italy	2,354	1,840	622	777
Japan	2,101	654	421	554
Republic of South Africa	0	213	213	2,628
United Kingdom	7,316	157	14	10,308
France	1	117	0	2
Mexico	65	107	43	29
Austria	0	32	32	0
Brazil	0	29	0	0
Spain	66	29	27	0
Israel	0	0	0	0
China	0	0	0	1
Taiwan	0	0	0	0
All others	456	0	0	4
Total	48,962	37,177	16,971	45,536
East Asia	2,101	654	421	556
EC-12	10,749	4,927	1,892	13,054
Eastern Europe	0	0	0	0
LAIA[1]	65	136	43	29
U.S. exports:				
Mexico	713	1,794	902	748
Canada	754	655	328	331
Saudi Arabia	628	430	169	49
Japan	334	392	194	215
United Kingdom	458	275	144	154
Hong Kong	34	248	57	196
Taiwan	210	212	43	33
Venezuela	398	179	155	24
Germany	5,132	102	44	20
Belgium	2,287	89	47	48
All others	9,114	1,110	480	2,415
Total	20,063	5,487	2,563	4,233
East Asia	1,298	1,092	429	818
EC-12	15,155	542	260	347
Eastern Europe	9	0	0	0
LAIA[1]	1,510	2,140	1,148	837

[1] Latin American Integration Association.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table F-19
Stainless steel plate[1]: U.S. imports for consumption, U.S. exports, by selected countries and country groups, 1991, 1992, Jan.-June 1992, and Jan.-June 1993

(Short tons)

Item	1991	1992	Jan.-June— 1992	Jan.-June— 1993
U.S. imports for consumption:				
Belgium	4,070	3,358	2,178	1,518
United Kingdom	2,598	2,845	1,753	461
Germany	2,689	2,209	1,544	761
Japan	2,508	2,003	1,315	626
Republic of South Africa	2	1,959	602	1,774
Finland	397	798	287	475
France	65	679	149	251
Sweden	659	673	400	576
Austria	464	259	115	157
Spain	49	212	26	154
Canada	18	135	61	246
Brazil	0	89	89	465
Netherlands	0	13	0	0
Ukraine	0	0	0	804
Korea	17	0	0	121
All others	66	0	0	11
Total	13,602	15,231	8,520	8,399
East Asia	2,525	2,003	1,315	746
EC-12	9,538	9,316	5,651	3,145
Eastern Europe	0	0	0	0
LAIA[2]	0	89	89	465
U.S. exports:				
Canada	4,029	5,307	1,674	2,609
Mexico	938	811	335	206
Germany	0	93	10	32
Taiwan	45	83	0	28
Honduras	87	70	32	26
United Kingdom	52	56	48	0
Hong Kong	207	51	11	23
Australia	0	22	22	0
Korea	3,251	19	19	2
Dominican Republic	0	18	0	0
All others	584	68	26	612
Total	9,193	6,598	2,178	3,539
East Asia	3,545	174	46	55
EC-12	423	153	62	561
Eastern Europe	17	0	0	0
LAIA[2]	985	813	335	246

[1] Excluding coiled plate. See app. A for details.
[2] Latin American Integration Association.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table F-20
Stainless steel sheet and strip[1]: U.S. imports for consumption, U.S. exports, by selected countries and country groups, 1991, 1992, Jan.-June 1992, and Jan.-June 1993

(Short tons)

Item	1991	1992	Jan.-June— 1992	Jan.-June— 1993
U.S. imports for consumption:				
Japan	43,150	44,261	21,119	22,705
Mexico	31,782	41,268	22,440	32,087
France	23,317	26,263	13,160	18,815
Spain	17,318	22,978	6,835	25,886
Germany	12,216	14,962	6,604	12,133
Canada	3,326	14,089	4,990	10,692
Korea	8,687	13,523	8,074	10,186
United Kingdom	10,469	11,974	5,859	8,563
Finland	8,438	11,749	4,254	5,863
Sweden	7,003	7,814	3,805	7,991
Italy	4,483	5,165	2,530	8,631
Republic of South Africa	0	4,406	2,455	2,624
Belgium	5,205	4,167	2,006	3,296
Brazil	730	2,091	1,066	1,834
India	361	1,145	21	2,156
All others	346	332	91	458
Total	176,830	226,186	105,308	173,919
East Asia	51,906	57,817	29,208	32,913
EC-12	73,078	85,568	36,993	77,461
Eastern Europe	19	0	0	0
LAIA[2]	32,511	43,359	23,506	33,920
U.S. exports:				
Mexico	42,876	35,168	19,219	2,318
Canada	22,743	22,131	9,320	16,303
Germany	1,963	3,667	2,517	1,112
France	1,527	3,033	1,558	2,878
Spain	28	1,683	459	22
Taiwan	1,554	1,568	883	1,127
United Kingdom	3,800	1,545	631	1,291
Hong Kong	3,175	918	404	1,420
Brazil	132	846	199	165
Australia	781	666	420	1,510
All others	19,413	6,843	3,159	5,181
Total	97,991	78,069	38,768	33,327
East Asia	14,676	4,053	2,028	4,716
EC-12	9,829	10,999	5,472	5,729
Eastern Europe	19	9	7	67
LAIA[2]	44,854	37,446	20,199	3,025

[1] Including coiled plate. See app. A for details.
[2] Latin American Integration Association.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table F-21
Stainless steel bars and shapes: U.S. imports for consumption, U.S. exports, by selected countries and country groups, 1991, 1992, Jan.-June 1992, and Jan.-June 1993

(Short tons)

Item	1991	1992	Jan.-June— 1992	1993
U.S. imports for consumption:				
Japan	19,988	19,742	8,934	10,218
Spain	5,626	5,971	3,159	3,515
Canada	5,089	5,762	3,058	3,920
Brazil	3,334	4,716	2,528	2,781
Italy	3,347	4,537	1,318	3,425
France	3,047	4,293	1,275	1,909
Sweden	3,595	3,379	2,079	1,035
Korea	3,822	3,343	1,431	2,125
India	1,404	2,226	848	2,951
Germany	566	1,308	542	628
United Kingdom	1,757	1,240	454	968
Switzerland	321	312	153	142
Taiwan	125	150	66	250
Austria	136	140	70	125
Yugoslavia (Pre-93)	259	72	72	0
All others	77	307	92	700
Total	52,493	57,499	26,079	34,692
East Asia	23,946	23,275	10,432	12,707
EC-12	14,349	17,396	6,765	10,460
Eastern Europe	259	132	72	85
LAIA[1]	3,349	4,723	2,529	2,783
U.S. exports:				
United Kingdom	1,285	6,334	1,582	271
Canada	3,590	3,340	1,809	1,357
Panama	27	1,999	660	7
Mexico	1,202	1,695	389	1,045
Venezuela	596	1,255	341	340
Japan	963	777	434	504
Israel	2,669	619	461	157
Saudi Arabia	207	489	150	167
Dominican Republic	177	419	150	630
Hong Kong	257	366	355	15
All others	6,018	2,641	1,464	922
Total	16,989	19,935	7,796	5,414
East Asia	3,096	1,835	1,179	660
EC-12	3,294	7,268	2,142	617
Eastern Europe	0	1	1	0
LAIA[1]	2,073	3,227	805	1,469

[1] Latin American Integration Association.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table F-22
Stainless steel wire rod: U.S. imports for consumption, U.S. exports, by selected countries and country groups, 1991, 1992, Jan.-June 1992, and Jan.-June 1993

(Short tons)

Item	1991	1992	Jan.-June— 1992	Jan.-June— 1993
U.S. imports for consumption:				
France	5,547	10,475	3,838	3,936
Japan	4,574	7,356	3,378	3,785
Sweden	4,244	5,191	2,357	3,017
India	1,729	4,305	2,144	3,560
Spain	3,309	3,828	1,605	2,588
Brazil	1,671	3,243	1,722	788
Italy	2,922	2,890	1,047	1,506
Taiwan	126	924	0	1,839
Korea	1,604	750	496	819
United Kingdom	120	523	200	653
Germany	0	98	0	20
Netherlands	0	21	21	0
Canada	48	10	10	0
Mexico	0	0	0	1
Argentina	0	0	0	0
All others	3	0	0	0
Total	25,897	39,616	16,818	22,512
East Asia	6,305	9,030	3,874	6,443
EC-12	11,898	17,836	6,711	8,703
Eastern Europe	0	0	0	0
LAIA[1]	1,671	3,243	1,722	789
U.S. exports:				
Brazil	736	650	290	1
Korea	25	300	19	7
Canada	674	215	88	249
Venezuela	63	191	34	258
Mexico	875	156	89	84
Singapore	13	146	145	34
Taiwan	640	81	64	6
United Kingdom	105	72	25	39
Argentina	6	65	22	0
Switzerland	3	56	53	0
All others	1,085	324	158	376
Total	4,224	2,256	987	1,054
East Asia	1,186	593	252	210
EC-12	161	155	55	131
Eastern Europe	0	0	0	0
LAIA[1]	1,702	1,076	447	346

[1] Latin American Integration Association.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table F-23
Stainless steel wire: U.S. imports for consumption, U.S. exports, by selected countries and country groups, 1991, 1992, Jan.-June 1992, and Jan.-June 1993

(Short tons)

Item	1991	1992	Jan.-June— 1992	1993
U.S. imports for consumption:				
Sweden	2,531	3,099	1,615	1,689
Japan	2,677	2,702	1,316	1,402
Canada	2,156	2,370	1,179	1,513
Taiwan	1,441	2,090	971	713
France	1,862	1,894	989	723
United Kingdom	1,082	1,560	891	734
Italy	1,447	1,271	667	1,642
Korea	778	905	476	515
Spain	932	677	489	488
Germany	361	646	310	234
Belgium	386	511	267	323
Switzerland	591	467	248	231
India	337	341	120	881
Thailand	105	191	74	314
Russia	0	157	0	49
All others	367	207	59	140
Total	17,054	19,089	9,669	11,590
East Asia	5,002	5,904	2,836	2,945
EC-12	6,070	6,581	3,634	4,143
Eastern Europe	4	0	0	0
LAIA[1]	341	162	31	111
U.S. exports:				
Canada	1,119	1,029	580	574
Mexico	507	356	170	217
United Kingdom	171	96	16	37
Germany	105	74	34	68
Korea	12	43	32	24
Italy	5	41	40	7
Switzerland	20	34	4	7
Colombia	11	33	17	21
Taiwan	6	32	3	16
Argentina	0	28	18	0
All others	683	414	184	283
Total	2,640	2,181	1,097	1,254
East Asia	122	140	62	79
EC-12	397	285	125	203
Eastern Europe	1	4	0	1
LAIA[1]	530	454	218	292

[1] Latin American Integration Association.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table F-24
Stainless steel pipe and tube: U.S. imports for consumption, U.S. exports, by selected countries and country groups, 1991, 1992, Jan.-June 1992, and Jan.-June 1993

(Short tons)

Item	1991	1992	Jan.-June— 1992	Jan.-June— 1993
U.S. imports for consumption:				
Japan	11,333	11,932	5,650	5,068
Taiwan	9,333	4,172	2,816	1,809
Malaysia	159	3,573	1,113	2,145
Canada	4,479	3,457	1,628	2,600
Italy	2,729	3,452	1,667	1,813
Spain	4,969	3,400	2,255	634
United Kingdom	1,238	2,409	1,187	2,003
Singapore	1,529	1,991	938	529
France	1,446	1,504	551	972
Germany	517	1,447	759	259
Korea	5,391	1,445	1,013	936
Thailand	191	871	321	271
Austria	441	697	510	87
Sweden	908	690	375	290
Netherlands	650	675	269	484
All others	2,906	896	309	987
Total	48,218	42,612	21,361	20,891
East Asia	28,278	24,176	11,877	10,827
EC-12	11,554	12,904	6,701	6,173
Eastern Europe	1,993	1	1	0
LAIA[1]	526	618	242	304
U.S. exports:				
Canada	5,623	6,386	3,043	3,468
Mexico	2,652	3,911	1,929	1,605
Singapore	342	731	298	318
Korea	2,050	590	471	291
Jamaica	98	545	408	18
India	234	402	237	38
Egypt	32	295	194	176
Philippines	140	191	1	1
United Kingdom	299	125	50	102
Venezuela	155	100	96	9
All others	3,310	1,425	586	1,726
Total	14,934	14,701	7,312	7,751
East Asia	2,673	1,849	869	1,033
EC-12	816	380	184	235
Eastern Europe	0	0	0	0
LAIA[1]	2,971	4,224	2,160	2,047

[1] Latin American Integration Association.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table F-25
Alloy tool steel (all forms): U.S. imports for consumption, U.S. exports, by selected countries and country groups, 1991, 1992, Jan.-June 1992, and Jan.-June 1993

(Short tons)

Item	1991	1992	Jan.-June— 1992	Jan.-June— 1993
U.S. imports for consumption:				
Germany	10,814	11,179	5,171	4,560
Sweden	6,246	7,687	3,715	3,037
Japan	4,291	5,047	1,899	3,274
Canada	12,371	4,151	2,367	3,413
Austria	4,139	3,013	1,216	1,910
Brazil	2,766	2,770	1,921	1,657
United Kingdom	1,493	1,259	635	670
France	277	919	301	1,670
Italy	1,027	674	252	381
Mexico	83	326	157	77
Taiwan	0	324	94	331
China	299	191	23	97
Korea	254	138	0	430
Spain	127	133	21	76
Poland	276	56	14	86
All others	695	55	8	134
Total	45,158	37,923	17,795	21,805
East Asia	4,844	5,701	2,016	4,132
EC-12	13,818	14,177	6,388	7,457
Eastern Europe	506	56	14	86
LAIA[1]	3,011	3,134	2,078	1,735
U.S. exports:				
Canada	1,859	2,360	1,276	1,391
Mexico	5,241	2,355	1,697	670
Germany	270	338	105	170
United Kingdom	177	159	66	19
Netherlands	94	130	97	17
Italy	47	105	46	6
Saudi Arabia	2	83	18	1
Angola	273	67	26	24
Taiwan	59	59	15	62
Malaysia	0	46	40	0
All others	569	272	171	1,045
Total	8,592	5,974	3,556	3,406
East Asia	230	202	132	715
EC-12	621	769	337	255
Eastern Europe	0	5	5	0
LAIA[1]	5,322	2,403	1,725	837

[1] Latin American Integration Association.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table F-26
Total, stainless and alloy tool steel products: U.S. imports for consumption, U.S. exports, by selected countries and country groups, 1991, 1992, Jan.-June 1992, and Jan.-June 1993

(Short tons)

Item	1991	1992	Jan.-June— 1992	Jan.-June— 1993
U.S. imports for consumption:				
Japan	90,622	93,697	44,032	47,632
Canada	48,761	49,806	23,114	43,417
France	35,562	46,144	20,263	28,279
Mexico	32,476	42,455	22,907	32,467
Sweden	39,503	39,920	18,897	25,868
Spain	32,396	37,230	14,418	33,341
Germany	28,175	34,633	16,158	20,561
United Kingdom	26,073	21,966	10,992	24,359
Korea	20,554	20,104	11,491	15,131
Italy	18,374	19,830	8,103	18,176
Brazil	8,823	12,966	7,330	7,667
Finland	9,018	12,582	4,573	6,366
Belgium	9,742	8,082	4,474	5,140
India	3,837	8,080	3,157	9,654
Taiwan	11,043	7,693	3,960	4,943
All others	13,255	20,147	8,652	16,340
Total	428,214	475,333	222,521	339,343
East Asia	124,908	128,560	61,979	71,270
EC-12	151,054	168,705	74,734	130,596
Eastern Europe	2,782	189	86	172
LAIA[1]	41,474	55,465	30,239	40,136
U.S. exports:				
Mexico	55,003	46,245	24,729	6,893
Canada	40,390	41,424	18,117	26,281
United Kingdom	6,347	8,662	2,562	1,913
Germany	7,791	4,628	2,945	1,517
France	4,425	3,293	1,634	3,227
Taiwan	3,995	2,229	1,144	1,315
Venezuela	1,934	2,193	927	831
Panama	423	2,124	691	128
Brazil	999	1,849	613	547
Spain	4,844	1,749	511	58
All others	48,477	20,805	10,383	17,266
Total	174,626	135,201	64,256	59,977
East Asia	26,826	9,937	4,997	8,285
EC-12	30,695	20,552	8,637	8,076
Eastern Europe	46	19	13	68
LAIA[1]	59,949	51,783	27,037	9,100

[1] Latin American Integration Association.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table F-27
Steel mill products and certain fabricated steel products: Value of U.S. imports for consumption, U.S. exports, by products and grades of steel, 1991, 1992, Jan.-June 1992, and Jan.-June 1993

(1,000 dollars)

Item	1991	1992	Jan.-June— 1992	Jan.-June— 1993
U.S. imports for consumption:				
Carbon & certain alloy[1] steel:				
Semifinished	505,791	500,125	281,046	325,434
Plate	305,405	303,747	148,370	115,388
Sheet and strip	3,089,470	3,717,099	1,792,563	1,384,940
Bars & certain shapes	440,348	459,340	213,520	261,197
Wire rod	294,588	377,494	201,292	190,822
Wire	278,526	312,454	162,676	175,054
Wire products	527,030	604,201	308,021	332,892
Structural shapes & units	325,913	296,698	147,806	193,116
Rails & related products	134,028	146,054	81,498	74,432
Pipe and tube	1,661,570	894,401	494,850	528,683
Subtotal	7,562,669	7,611,614	3,831,642	3,581,958
Stainless & alloy tool steel:				
Stainless steel:				
Semifinished	73,116	55,367	25,235	53,164
Plate	35,120	33,566	18,532	17,126
Sheet and strip	348,586	423,746	199,936	312,928
Bars & certain shapes	133,704	133,954	63,144	75,052
Wire rod	60,057	78,746	34,035	42,605
Wire	69,145	73,179	37,014	41,213
Pipe and tube	194,508	173,769	87,044	78,637
Tool steel (all forms)	78,904	80,677	36,169	46,529
Subtotal	993,141	1,053,004	501,109	667,254
Total	8,555,810	8,664,618	4,332,751	4,249,212
U.S. exports:				
Carbon & certain alloy[1] steel:				
Semifinished	244,988	170,144	84,993	99,523
Plate	98,910	79,752	43,277	39,759
Sheet and strip	1,472,553	1,102,121	589,152	499,565
Bars & certain shapes	284,511	271,458	139,933	164,120
Wire rod	64,478	34,571	14,795	15,929
Wire	91,063	94,553	44,206	55,484
Wire products	90,003	115,954	62,505	60,249
Structural shapes & units	595,121	403,889	196,353	236,029
Rails & related products	82,168	64,789	35,120	46,552
Pipe and tube	752,052	726,230	399,129	303,384
Subtotal	3,775,847	3,063,460	1,609,463	1,520,594
Stainless & alloy tool steel:				
Stainless steel:				
Semifinished	49,913	30,847	14,285	15,713
Plate	21,569	19,747	7,239	9,728
Sheet and strip	214,439	195,163	95,713	83,589
Bars & certain shapes	55,686	41,667	22,119	18,331
Wire rod	12,170	7,044	3,041	3,411
Wire	14,235	12,317	6,229	8,849
Pipe and tube	66,996	67,284	34,619	33,271
Tool steel (all forms)	21,482	25,478	14,973	13,233
Subtotal	456,490	399,547	198,217	186,125
Total	4,232,337	3,463,008	1,807,680	1,706,719

[1] "Certain alloy" refers to alloy steel other than stainless or tool steel.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table F-28
Steel mill products and certain fabricated steel products: Unit value of U.S. imports for consumption, 1991, 1992, Jan.-June 1992, and Jan.-June 1993

(Per short ton)

Item	1991	1992	Jan.-June— 1992	Jan.-June— 1993
Carbon and certain alloy[1] steel:				
Semifinished[2]	$253	$217	$224	$201
Plate	392	346	354	360
Sheet and strip:				
Hot rolled	317	299	308	299
Cold rolled	492	486	491	526
Galvanized	542	545	569	497
Tin Plate	624	617	627	633
Tin free	606	614	630	622
Other coated	619	588	593	592
Average, sheet and strip	446	434	444	431
Bar:				
Hot finished	462	434	440	425
Cold finished	701	701	725	672
Reinforcing	319	258	257	232
Light shapes	328	321	327	316
Average, bar	467	434	441	442
Wire rod	359	341	336	363
Wire	743	759	771	714
Wire products	1,030	1,029	1,018	1,069
Structural shapes and units:				
Heavy structurals	403	374	370	366
Fabricated structurals	1,373	1,255	1,240	1,323
Average, structurals	539	503	495	511
Rails and related products	441	488	488	545
Pipe and tube:				
Oil country tubular goods	757	989	917	731
Line pipe	597	541	558	484
MechanicalpPipe	920	886	892	851
Structural pipe	519	477	482	473
Pressure tubing	1,082	1,081	1,135	1,058
Other (incl. standard)	522	517	517	508
Average, pipe and tube	618	596	593	566
Average, all carbon and certain alloy[1] steel	474	440	445	433
Stainless and alloy tool steel:				
Stainless steel:				
Semifinished[2]	$1,493	$1,489	$1,498	$1,168
Plate	2,582	2,204	2,170	2,039
Sheet and strip:				
Sheet	1,798	1,712	1,735	1,682
Strip	3,211	3,304	3,356	3,052
Average, sheet and strip	1,971	1,873	1,910	1,799
Bars and shapes	2,547	2,330	2,398	2,163
Wire rod	2,319	1,988	2,006	1,893
Wire	4,054	3,834	3,890	3,556
Pipe and tube	4,034	4,078	4,073	3,764
Alloy tool steel (all forms)	1,747	2,127	2,093	2,134
Average, all stainless and alloy tool steel	2,319	2,215	2,258	1,966

[1] Includes alloy steel other than stainless or tool steel.

[2] Semifinished steel includes ingots, blooms, billets, slabs, and sheet bars.

Source: Compiled from data of the AISI, and official statistics of the U.S. Department of Commerce.

Table F-29
Steel mill products and certain fabricated steel products: Unit value of U.S. exports, 1991, 1992, Jan.-June 1992, and Jan.-June 1993

(Per short ton)

Item	1991	1992	Jan.-June— 1992	Jan.-June— 1993
Carbon and certain alloy[1] steel:				
Semifinished[2]	$361	$408	$427	$328
Plate	419	482	457	464
Sheet and strip:				
Hot rolled	329	393	395	389
Cold rolled	652	697	682	738
Galvanized	694	671	650	688
Tin Plate	518	527	510	526
Tin free	624	613	630	612
Other coated	1,150	1,051	1,055	988
Average, sheet and strip	452	574	564	628
Bar:				
Hot finished	634	660	610	575
Cold finished	1,023	830	884	905
Reinforcing	288	286	294	278
Light shapes	465	484	486	465
Average, bar	508	531	524	477
Wire rod	397	504	500	420
Wire	1,049	1,075	1,230	1,246
Wire products	1,746	2,050	2,107	1,790
Structural shapes and units:				
Heavy structurals	423	453	436	477
Fabricated structurals	1,682	1,675	1,607	2,171
Average, structurals	906	905	869	1,054
Rails and related products	760	873	880	801
Pipe and tube:				
Oil country tubular goods	919	1,082	1,053	1,123
Line pipe	891	925	936	883
Other[3]	1,286	1,228	1,315	1,228
Average, pipe and tube	1,019	1,093	1,104	1,117
Average, all carbon and certain alloy[1] steel	578	695	691	692
Stainless and alloy tool steel:				
Stainless steel:				
Semifinished[2]	$2,488	$5,622	$5,457	$3,712
Plate	2,346	2,993	3,288	2,749
Sheet and strip:				
Sheet	2,226	2,604	2,676	2,303
Strip	2,156	2,426	2,359	2,706
Average, sheet and strip	2,188	2,500	2,473	2,508
Bars and shapes	3,278	2,090	2,359	3,386
Wire rod	2,881	3,122	3,077	3,236
Wire	5,392	5,648	5,616	7,057
Pipe and tube	4,486	4,577	4,683	4,292
Alloy tool steel (all forms)	2,500	4,265	4,240	3,885
Average, all stainless and alloy tool steel	2,614	2,955	3,009	3,103

[1] Includes alloy steel other than stainless or tool steel.
[2] Semifinished steel includes ingots, blooms, billets, slabs, and sheet bars.
[3] Includes mechanical, standard, structural, and pressure pipe and tube.

Source: Compiled from data of the AISI, and official statistics of the U.S. Department of Commerce.

Table F-30
Steel mill products and certain fabricated steel products: U.S. imports for consumption of specified products and imports as a percent of major product groupings, 1991, 1992, Jan.-June 1992, and Jan.-June 1993

Item	1991	1992	Jan.-June— 1992	Jan.-June— 1993
	Quantity (short tons)			
Carbon and certain alloy[1] steel:				
Semifinished:				
Ingots	2,706	4,922	472	12,104
Blooms and billets	586,127	680,504	385,936	329,822
Slabs and sheet bars	1,407,776	1,621,717	854,438	1,275,215
Total	1,996,610	2,307,144	1,240,846	1,617,141
Plate:				
Carbon	694,877	784,529	370,642	248,831
Alloy	84,125	93,643	48,212	71,395
Total	779,002	878,172	418,854	320,226
Sheet and strip:				
Hot rolled:				
Sheet	2,606,689	3,360,533	1,582,219	1,274,163
Strip	105,520	136,782	74,707	74,444
Cold rolled:				
Black plate	129,488	152,394	60,766	48,338
Electrical	81,976	81,842	44,284	51,774
Other sheet	1,744,854	1,954,906	956,711	665,224
Other strip	119,987	147,309	72,012	65,838
Galvanized	1,527,317	1,995,612	856,141	771,080
Tin plate	310,962	321,674	164,687	128,937
Tin free	114,267	132,334	70,194	66,132
Other coated	189,857	283,754	130,037	66,043
Total, sheet and strip	6,930,919	8,567,140	4,011,756	3,211,973
Bars:				
Hot rolled:				
Carbon	421,611	448,213	192,925	205,757
Alloy	231,736	290,495	137,696	199,353
Cold rolled:				
Carbon	79,946	84,107	38,943	71,727
Alloy	38,520	32,088	15,565	22,945
Reinforcing	107,344	119,273	59,531	40,385
Light structural shapes	64,689	83,021	35,749	50,343
Total, bars	943,845	1,057,195	480,410	590,509
Wire rod and related products:				
Wire rod:				
Carbon	800,363	1,078,013	594,747	509,791
Alloy	20,663	28,792	11,851	16,412
Wire:				
Carbon	337,141	373,587	190,431	225,211
Alloy	37,609	38,305	20,405	20,023
Wire products:				
Nails	286,915	339,944	168,460	176,428
Barbed wire	11,167	12,106	6,886	9,041
Wire fencing	36,793	38,382	21,896	20,150
Bale ties	497	558	283	395
Wire strand	102,065	122,722	63,501	71,434
Wire rope	74,402	73,204	39,422	33,909
Total, wire rod and related products	1,707,616	2,105,612	1,117,882	1,082,793

See footnotes at end of table.

Table F-30—Continued
Steel mill products and certain fabricated steel products: U.S. imports for consumption of specified products and imports as a percent of major product groupings, 1991, 1992, Jan.-June 1992, and Jan.-June 1993

Item	1991	1992	Jan.-June— 1992	1993
	Quantity (short tons)—Continued			
Structurals:				
Heavy	519,377	503,124	264,545	320,463
Fabricated	84,984	86,488	41,509	57,359
Total	604,361	589,613	306,054	377,822
Rails and related products:				
Rails	254,189	245,144	138,443	105,900
Joint bars and tie plates	12,991	9,596	5,914	7,138
Track spikes	3,352	3,094	1,571	1,519
Wheels and axles	33,064	41,586	18,257	21,910
Total	303,596	299,418	164,186	136,466
Pipes and tubes:				
Oil country tubular goods	412,616	100,646	49,318	121,265
Line pipe	1,003,500	404,234	254,704	272,723
Mechanical pipe	169,832	147,732	72,394	86,712
Structural pipe	209,824	227,314	115,530	143,325
Pressure tubing	35,881	27,536	13,561	16,587
Other (including standard)	855,502	593,415	330,009	292,936
Total	2,687,154	1,500,877	835,515	933,547
Stainless and alloy tool steel:				
Stainless:				
Semifinished:				
Ingots	2,702	340	156	609
Blooms and billets	32,516	26,317	12,472	26,897
Slabs and sheet bars	13,744	10,520	4,344	18,031
Total	48,962	37,177	16,971	45,536
Plate	13,602	15,231	8,520	8,399
Sheet and strip:				
Sheet:				
Hot rolled	12,595	29,254	10,170	31,522
Cold rolled	142,537	174,041	83,900	127,540
Strip	21,698	22,891	11,238	14,857
Total, sheet and strip	176,830	226,186	105,308	173,919
Bars and shapes	52,493	57,499	26,079	34,692
Wire rod	25,897	39,616	16,818	22,512
Wire	17,054	19,089	9,669	11,590
Pipe and tube	48,218	42,612	21,361	20,891
Alloy tool steel (all forms):				
Semifinished[2]	10,608	2,348	1,813	1,625
Bars	25,407	25,509	11,720	14,022
Other	9,143	10,066	4,262	6,158
Total, stainless and alloy tool steel	45,158	37,923	17,795	21,805

See footnotes at end of table.

Table F-30—Continued
Steel mill products and certain fabricated steel products: U.S. imports for consumption of specified products and imports as a percent of major product groupings, 1991, 1992, Jan.-June 1992, and Jan.-June 1993

Item	1991	1992	Jan.-June— 1992	1993
	Share of product group total (percent)			
Carbon and certain alloy[1] steel:				
Semifinished:				
Ingots	0.14	0.21	0.04	0.75
Blooms and billets	29.36	29.50	31.10	20.40
Slabs and sheet bars	70.51	70.29	68.86	78.86
Total	100.00	100.00	100.00	100.00
Plate:				
Carbon	89.20	89.34	88.49	77.70
Alloy	0.80	10.66	11.51	22.30
Total	100.00	100.00	100.00	100.00
Sheet and strip:				
Hot rolled:				
Sheet	37.61	39.23	39.44	39.67
Strip	1.52	1.60	1.86	2.32
Cold rolled:				
Black plate	1.87	1.78	1.51	1.50
Electrical	1.18	0.96	1.10	1.61
Other sheet	25.17	22.82	23.85	20.71
Other strip	1.73	1.72	1.80	2.05
Galvanized	22.04	23.29	21.34	24.01
Tin plate	4.49	3.75	4.11	4.01
Tin free	1.65	1.54	1.75	2.06
Other coated	2.74	3.31	3.24	2.06
Total, sheet and strip	100.00	100.00	100.00	100.00
Bars:				
Hot rolled:				
Carbon	44.67	42.40	40.16	34.84
Alloy	24.55	27.48	28.66	33.76
Cold rolled:				
Carbon	8.47	7.96	8.11	12.15
Alloy	4.08	3.04	3.24	3.89
Reinforcing	11.37	11.28	12.39	6.84
Light structural shapes	6.85	7.85	7.44	8.53
Total, bars	100.00	100.00	100.00	100.00
Wire rod and related products:				
Wire rod:				
Carbon	46.87	51.20	53.20	47.08
Alloy	1.21	1.37	1.06	1.52
Wire:				
Carbon	19.74	17.74	17.03	20.80
Alloy	2.20	1.82	1.83	1.85
Wire products:				
Nails	16.80	16.14	15.07	16.29
Barbed wire	0.65	0.57	0.62	0.83
Wire fencing	2.15	1.82	1.96	1.86
Bale ties	0.03	0.03	0.03	0.04
Wire strand	5.98	5.83	5.68	6.60
Wire rope	4.36	3.48	3.53	3.13
Total, wire rod and related products	100.00	100.0	100.00	100.00

See footnotes at end of table.

Table F-30—Continued
Steel mill products and certain fabricated steel products: U.S. imports for consumption of specified products and imports as a percent of major product groupings, 1991, 1992, Jan.-June 1992, and Jan.-June 1993

Item	1991	1992	Jan.-June— 1992	1993
	Share of product group total (percent)—Continued			
Structurals:				
Heavy	85.94	85.33	86.44	84.82
Fabricated	14.06	14.67	13.56	15.18
Total	100.00	100.00	100.00	100.00
Rails and related products:				
Rails	83.73	81.87	84.32	77.60
Joint bars and tie plates	4.28	3.20	3.60	5.23
Track spikes	1.10	1.03	0.96	1.11
Wheels and axles	10.89	13.89	11.12	16.05
Total	100.00	100.00	100.00	100.00
Pipes and tubes:				
Oil country tubular goods	15.36	6.71	5.90	12.99
Line pipe	37.34	26.93	30.48	29.21
Mechanical pipe	6.32	9.84	8.66	9.29
Structural pipe	7.81	15.15	13.83	15.35
Pressure tubing	1.34	1.83	1.62	1.78
Other (including standard)	31.84	39.54	39.50	31.38
Total	100.00	100.00	100.00	100.00
Stainless and alloy tool steel:				
Stainless:				
Semifinished:				
Ingots	5.52	0.91	0.92	1.34
Blooms and billets	66.41	70.79	73.49	59.07
Slabs and sheet bars	28.07	28.30	25.59	39.60
Total	100.00	100.00	100.00	100.00
Plate	100.00	100.00	99.99	99.99
Sheet and strip:				
Sheet:				
Hot rolled	7.12	12.93	9.66	18.12
Cold rolled	80.61	76.95	79.67	73.33
Strip	12.27	10.12	10.67	8.54
Total, sheet and strip	100.00	100.00	100.00	100.00
Bars and shapes	100.00	100.00	100.00	100.00
Wire rod	100.00	100.00	100.00	100.00
Wire	100.00	100.00	100.00	100.00
Pipe and tube	100.00	100.00	100.00	100.00
Alloy tool steel (all forms):				
Semifinished[2]	23.49	6.19	10.19	7.45
Bars	56.26	67.26	65.86	64.31
Other	20.25	26.54	23.95	28.24
Total, stainless and alloy tool steel	100.00	100.00	100.00	100.00

[1] "Certain alloy" refers to alloy steel other than stainless or tool steel.
[2] Semifinished steel includes ingots, blooms, billets, slabs, and sheet bars.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table F-31
Steel mill products and certain fabricated steel products: U.S. exports of specified products and exports as a percent of major product groupings, 1991, 1992, Jan.-June 1992, and Jan.-June 1993

Item	1991	1992	Jan.-June— 1992	Jan.-June— 1993
	Quantity (short tons)			
Carbon and certain alloy[1] steel:				
Semifinished[2]	679,017	417,424	201,189	303,568
Plate:				
Carbon	219,715	150,589	92,927	76,746
Alloy	16,128	14,895	6,584	8,979
Total	235,842	165,485	99,511	85,725
Sheet and strip:				
Hot rolled:				
Sheet	2,063,015	619,949	373,878	170,398
Strip	36,709	56,051	19,798	18,345
Cold rolled:				
Black plate	4,883	4,734	3,034	2,962
Electrical	84,184	47,875	27,655	26,456
Other sheet	380,228	338,486	195,808	152,083
Other strip	126,341	127,654	63,806	73,388
Galvanized	303,358	297,788	168,143	143,955
Tin plate	150,737	279,122	121,822	108,653
Tin free	37,987	59,805	27,955	43,475
Other coated	70,446	86,990	45,435	55,975
Total, sheet and strip	3,257,888	1,918,453	1,047,334	795,691
Bars:				
Hot rolled:				
Carbon	136,338	125,435	75,266	77,967
Alloy	91,126	91,015	55,884	63,385
Cold rolled:				
Carbon	38,469	51,764	22,445	24,296
Alloy	10,179	13,046	6,339	8,041
Reinforcing	234,616	183,557	90,988	137,268
Light structural shapes	49,540	45,987	22,365	33,065
Total, bars	560,268	510,804	273,287	344,022
Wire rod and related products:				
Wire rod:				
Carbon	155,710	58,416	24,138	29,618
Alloy	6,522	10,174	4,054	8,327
Wire:				
Carbon	75,236	76,421	30,296	37,017
Alloy	11,539	11,536	5,646	7,508
Wire products:				
Nails	14,135	17,143	7,836	8,948
Barbed wire	3,997	2,124	1,127	1,568
Wire fencing	10,794	14,209	6,980	9,533
Wire strand	18,245	18,170	10,063	9,964
Wire rope	4,380	4,927	2,807	3,655
Total, all wire rod and related products	300,559	213,121	92,948	116,138

See footnotes at end of table.

Table F-31—Continued
Steel mill products and certain fabricated steel products: U.S. exports of specified products and exports as a percent of major product groupings, 1991, 1992, Jan.-June 1992, and Jan.-June 1993

Item	1991	1992	Jan.-June— 1992	1993
	Quantity (short tons)—Continued			
Structurals:				
Heavy	405,222	281,533	146,386	147,675
Fabricated	251,796	164,879	76,279	76,261
Total	657,019	446,412	222,665	223,936
Rails and related products:				
Rails	77,005	34,769	16,860	23,322
Joint bars and tie plates	15,601	19,416	11,938	23,162
Wheels and axles	15,450	20,023	11,148	11,661
Total	108,056	74,208	39,946	58,146
Pipes and tubes:				
Oil country tubular goods	362,765	227,245	123,951	86,950
Line pipe	162,052	187,652	119,198	60,920
Other[3]	213,358	249,684	118,740	123,686
Total	738,176	664,582	361,890	271,556
Stainless and alloy tool steel:				
Stainless:				
Semifinished[2]	20,063	5,487	2,563	4,233
Plate	9,193	6,598	2,178	3,539
Sheet and strip:				
Sheet:				
Hot rolled	14,500	9,239	2,592	2,599
Cold rolled	30,906	23,204	11,124	13,755
Strip	52,586	45,625	25,052	16,973
Total, sheet and strip	97,991	78,069	38,768	33,327
Bars and shapes	16,989	19,935	7,796	5,414
Wire rod	4,224	2,256	987	1,054
Wire	2,640	2,181	1,097	1,254
Pipe and tube	14,934	14,701	7,312	7,751
Alloy tool steel (all forms)	8,592	5,974	3,556	3,406
Total, stainless and alloy tool steel	174,626	135,201	64,256	59,977

See footnotes at end of table.

Table F-31—Continued
Steel mill products and certain fabricated steel products: U.S. exports of specified products and exports as a percent of major product groupings, 1991, 1992, Jan.-June 1992, and Jan.-June 1993

Item	1991	1992	Jan.-June— 1992	1993
	Share of product group total (percent)			
Carbon and certain alloy[1] steel:				
Semifinished[2]	100.00	100.00	100.00	100.00
Plate:				
Carbon	93.16	91.00	93.38	89.53
Alloy	6.84	9.00	6.62	10.47
Total	100.00	100.00	100.00	100.00
Sheet and strip:				
Hot rolled:				
Sheet	63.32	32.32	35.70	21.42
Strip	1.13	2.92	1.89	2.31
Cold rolled:				
Black plate	0.15	0.25	0.29	0.37
Electrical	2.58	2.50	2.64	3.32
Other sheet	11.67	17.64	18.70	19.11
Other strip	3.88	6.65	6.09	9.22
Galvanized	9.31	15.52	16.05	18.09
Tin Plate	4.63	14.55	11.63	13.66
Tin free	1.17	3.12	2.67	5.46
Other coated	2.16	4.53	4.34	7.03
Total, sheet and strip	100.00	100.00	100.00	100.00
Bars:				
Hot rolled:				
Carbon	24.33	24.56	27.54	22.66
Alloy	16.26	17.82	20.45	18.42
Cold rolled:				
Carbon	6.87	10.13	8.21	7.06
Alloy	1.82	2.55	2.32	2.34
Reinforcing	41.88	35.93	33.29	39.90
Light structural shapes	8.84	9.00	8.18	9.61
Total, bars	100.00	100.00	100.00	100.00
Wire rod and related products:				
Wire rod:				
Carbon	51.81	27.41	25.97	25.50
Alloy	2.17	4.77	4.36	7.17
Wire:				
Carbon	25.03	35.86	32.59	31.87
Alloy	3.84	5.41	6.07	6.46
Wire products:				
Nails	4.70	8.04	8.43	7.71
Barbed wire	1.33	1.00	1.21	1.35
Wire fencing	3.59	6.67	7.51	8.21
Wire strand	6.07	8.53	10.83	8.58
Wire rope	1.46	2.31	3.02	3.15
Total, all wire rod and related products	100.00	100.00	100.00	100.00

See footnotes at end of table.

Table F-31—Continued
Steel mill products and certain fabricated steel products: U.S. exports of specified products and exports as a percent of major product groupings, 1991, 1992, Jan.-June 1992, and Jan.-June 1993

Item	1991	1992	Jan.-June— 1992	1993
	Share of product group total (percent)—Continued			
Structurals:				
Heavy	61.68	63.07	65.74	65.95
Fabricated	38.32	36.93	34.26	34.05
Total	100.00	100.00	100.00	100.00
Rails and related products:				
Rails	71.26	46.85	42.21	40.11
Joint bars and tie plates	14.44	26.16	29.88	39.83
Wheels and axles	14.30	26.98	27.91	20.05
Total	100.00	100.00	100.00	100.00
Pipes and tubes:				
Oil country tubular goods	49.14	34.19	34.25	32.02
Line pipe	21.95	28.24	32.94	22.43
Other[3]	28.90	37.57	32.81	45.55
Total	100.00	100.00	100.00	100.00
Stainless and alloy tool steel:				
Stainless:				
Semifinished[2]	100.00	100.00	100.00	100.00
Plate	100.00	100.00	99.99	99.99
Sheet and strip:				
Sheet:				
Hot rolled	14.80	11.83	6.68	7.80
Cold rolled	31.54	29.72	28.69	41.27
Strip	53.66	58.44	64.62	50.93
Total, sheet and strip	100.00	100.00	100.00	100.00
Bars and shapes	100.00	100.00	100.00	100.00
Wire rod	100.00	100.00	100.00	100.00
Wire	100.00	100.00	100.00	100.00
Pipe and tube	100.00	100.00	100.00	100.00
Alloy tool steel (all forms)	100.00	100.00	100.00	100.00
Total, stainless and alloy tool steel	100.00	100.00	100.00	100.00

[1] "Certain alloy" refers to alloy steel other than stainless or tool steel.
[2] Semifinished steel includes ingots, blooms, billets, slabs, and sheet bars.
[3] Includes mechanical, standard, structural, and pressure pipe and tube.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table F-32
Steel mill products and certain fabricated steel products: U.S. imports for consumption, by customs areas, 1991, 1992, Jan.-June 1992, and Jan.-June 1993

(Short tons)

Item	1991	1992	Jan.-June—	
			1992	1993
Atlantic Coast	2,796,230	2,856,868	1,627,181	1,401,232
Great Lakes-Canadian border	5,092,319	6,788,052	2,929,069	3,578,365
Gulf Coast-Mexican border	4,388,184	4,051,683	2,174,676	2,033,620
Off-shore	267,302	293,409	137,608	128,913
Pacific Coast	3,837,281	3,790,493	1,929,489	1,467,690
Total	16,381,316	17,780,504	8,798,023	8,609,820

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table F-33
Steel mill products and certain fabricated steel products: U.S. imports, for consumption, through the Atlantic Coast customs area, 1991, 1992, Jan.-June 1992, and Jan.-June 1993

(Short tons)

Item	1991	1992	Jan.-June— 1992	Jan.-June— 1993
Carbon and certain alloy[1] steel:				
Semifinished[2]	215,983	197,728	147,348	148,672
Plate	135,459	119,918	71,746	46,975
Sheet and strip	1,363,034	1,474,263	814,111	605,908
Bars and certain shapes	75,641	90,076	48,683	38,066
Wire rod	150,070	206,153	123,201	96,608
Wire	56,557	60,118	31,827	36,111
Wire products	142,681	180,784	92,278	98,967
Structural shapes and units	91,410	85,277	47,233	69,536
Rails and related products	27,479	22,651	17,808	10,912
Pipe and tube	366,760	216,592	140,125	82,745
Total	2,625,076	2,653,559	1,534,360	1,234,500
Stainless and alloy tool steel:				
Stainless steel:				
Semifinished[2]	14,741	12,091	4,921	21,231
Plate	3,742	6,506	3,783	5,212
Sheet and strip	66,343	85,256	38,765	80,183
Bars and certain shapes	23,850	27,003	12,280	17,438
Wire rod	18,497	31,080	13,001	18,269
Wire	9,195	9,461	4,866	6,505
Pipe and tube	15,230	11,508	6,113	6,921
Tool steel (all forms)	19,555	20,405	9,092	10,974
Total, stainless and tool	171,154	203,309	92,821	166,733
Grand total	2,796,230	2,856,868	1,627,181	1,401,232

[1] "Certain alloy" refers to alloy steel other than stainless or tool steel.
[2] Semifinished steel includes ingots, blooms, billets, slabs, and sheet bars.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table F-34
Steel mill products and certain fabricated steel products: U.S. imports for consumption through the Great Lakes-Canadian border customs area, 1991, 1992, Jan.-June 1992, and Jan.-June 1993

(Short tons)

Item	1991	1992	Jan.-June— 1992	Jan.-June— 1993
Carbon and certain alloy[1] steel:				
Semifinished[2]	147,430	497,809	138,157	527,462
Plate	225,946	296,303	129,035	78,413
Sheet and strip	2,472,889	3,409,624	1,403,681	1,514,632
Bars and certain shapes	557,758	722,328	312,632	420,533
Wire rod	394,153	527,597	278,621	266,965
Wire	197,111	231,314	117,840	139,498
Wire products	87,258	100,003	50,853	54,832
Structural shapes and units	267,925	284,051	138,671	152,519
Rails and related products	125,448	128,874	53,775	48,499
Pipe and tube	517,440	481,639	259,616	302,088
Total	4,993,357	6,679,543	2,882,882	3,505,439
Stainless and alloy tool steel:				
Stainless steel:				
Semifinished[2]	21,834	19,847	9,821	21,038
Plate	1,496	1,883	974	1,241
Sheet and strip	29,589	48,531	17,420	27,304
Bars and certain shapes	9,236	11,456	5,350	6,588
Wire rod	1,866	2,765	961	956
Wire	5,214	6,311	3,245	3,832
Pipe and tube	7,264	6,080	2,886	4,087
Tool steel (all forms)	22,463	11,637	5,530	7,880
Total, stainless and tool	98,962	108,509	46,187	72,925
Grand total	5,092,319	6,788,052	2,929,069	3,578,365

[1] "Certain alloy" refers to alloy steel other than stainless or tool steel.
[2] Semifinished steel includes ingots, blooms, billets, slabs, and sheet bars.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table F-35
Steel mill products and certain fabricated steel products: U.S. imports for consumption through the Gulf Coast-Mexican border customs area, 1991, 1992, Jan.-June 1992, and Jan.-June 1993

(Short tons)

Item	1991	1992	Jan.-June— 1992	Jan.-June— 1993
Carbon and certain alloy[1] steel:				
Semifinished[2]	603,254	576,719	322,298	483,858
Plate	361,340	418,292	198,090	169,212
Sheet and strip	1,369,315	1,646,240	857,077	511,584
Bars and certain shapes	150,691	100,628	50,031	71,507
Wire rod	197,187	302,093	173,499	134,484
Wire	44,736	48,401	22,921	27,446
Wire products	133,800	152,177	80,445	82,484
Structural shapes and units	128,798	124,448	69,146	97,145
Rails and related products	61,407	72,166	49,472	24,843
Pipe and tube	1,233,838	503,817	296,294	367,395
Total	4,284,367	3,944,981	2,119,274	1,969,959
Stainless and alloy tool steel:				
Stainless steel:				
Semifinished[2]	11,879	5,145	2,203	3,196
Plate	6,001	4,933	2,652	1,347
Sheet and strip	54,715	62,099	33,085	43,484
Bars and certain shapes	10,425	10,128	4,351	5,594
Wire rod	2,142	1,769	914	1,104
Wire	1,848	2,224	1,069	847
Pipe and tube	15,145	16,738	8,793	6,270
Tool steel (all forms)	1,663	3,666	2,335	1,820
Total, stainless and tool	103,818	106,701	55,403	63,662
Grand total	4,388,184	4,051,683	2,174,676	2,033,620

[1] "Certain alloy" refers to alloy steel other than stainless or tool steel.
[2] Semifinished steel includes ingots, blooms, billets, slabs, and sheet bars.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table F-36
Steel mill products and certain fabricated steel products: U.S. imports for consumption through the offshore customs area, 1991, 1992, Jan.-June 1992, and Jan.-June 1993

(Short tons)

Item	1991	1992	Jan.-June— 1992	Jan.-June— 1993
Carbon and certain alloy[1] steel:				
Semifinished[2]	0	0	0	2
Plate	5,182	3,615	1,184	3,134
Sheet and strip	66,482	87,630	46,129	40,590
Bars and certain shapes	99,676	98,240	45,192	33,893
Wire rod	12,199	10,073	4,362	6,218
Wire	13,339	10,667	5,769	5,093
Wire products	5,953	5,300	2,783	2,779
Structural shapes and units	11,587	12,444	6,301	6,783
Rails and related products	439	1,040	751	889
Pipe and tube	49,995	63,428	24,934	29,522
Total	264,852	292,438	137,405	128,902
Stainless and alloy tool steel:				
Stainless steel:				
Semifinished[2]	0	(3)	0	0
Plate	0	0	0	0
Sheet and strip	0	(3)	(3)	10
Bars and certain shapes	0	(3)	(3)	0
Wire rod	0	0	0	0
Wire	64	(3)	(3)	0
Pipe and tube	2,386	970	202	1
Tool steel (all forms)	0	0	0	0
Total, stainless and tool	2,450	971	202	11
Grand total	267,302	293,409	137,608	128,913

[1] "Certain alloy" refers to alloy steel other than stainless or tool steel.
[2] Semifinished steel includes ingots, blooms, billets, slabs, and sheet bars.
[3] Less than 0.5 short tons.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table F-37
Steel mill products and certain fabricated steel products: U.S. imports for consumption through the Pacific coast customs area, 1991, 1992, Jan.-June 1992, and Jan.-June 1993

(Short tons)

Item	1991	1992	Jan.-June— 1992	Jan.-June— 1993
Carbon and certain alloy[1] steel:				
Semifinished[2]	1,029,943	1,034,887	633,043	457,147
Plate	51,075	40,044	18,799	22,492
Sheet and strip	1,659,198	1,949,383	890,757	539,260
Bars and certain shapes	60,079	45,923	23,871	26,511
Wire rod	67,417	60,889	26,915	21,929
Wire	63,008	61,391	32,480	37,086
Wire products	142,147	148,652	74,088	72,294
Structural shapes and units	104,641	83,393	44,703	51,838
Rails and related products	88,822	74,687	42,379	51,323
Pipe and tube	519,121	235,402	114,546	151,798
Total	3,785,451	3,734,651	1,901,582	1,431,678
Stainless and alloy tool steel:				
Stainless steel:				
Semifinished[2]	507	94	26	71
Plate	2,363	1,910	1,111	598
Sheet and strip	26,184	30,299	16,037	22,938
Bars and certain shapes	8,981	8,912	4,097	5,072
Wire rod	3,392	4,002	1,942	2,183
Wire	733	1,094	489	407
Pipe and tube	8,193	7,315	3,366	3,611
Tool steel (all forms)	1,478	2,215	838	1,130
Total, stainless and tool	51,831	55,842	27,907	36,012
Grand total	3,837,281	3,790,493	1,929,489	1,467,690

[1] "Certain alloy" refers to alloy steel other than stainless or tool steel.
[2] Semifinished steel includes ingots, blooms, billets, slabs, and sheet bars.

Source: Compiled from official statistics of the U.S. Department of Commerce.