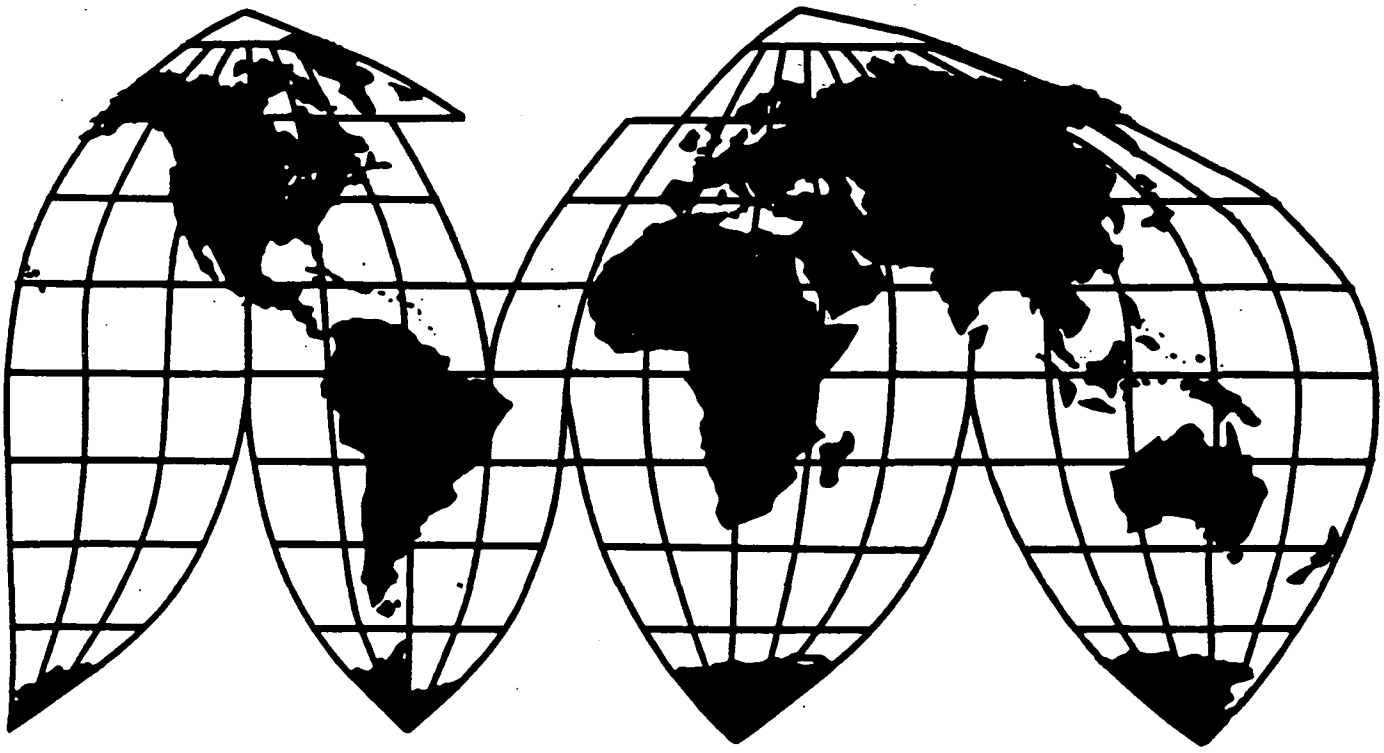
Steel Semiannual Monitoring Report

Special Focus: U.S. Industry Conditions

Investigation No. 332-327

Publication 2759 **April 1994**

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, the United States International Trade Commission (USITC) instituted investigation No. 332-327, *Steel Semiannual Monitoring Report*, under section 332(g) of the Tariff Act of 1930 (19 U.S.C. 1332 (g)). 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 (to be submitted in April 1993, 1994, and 1995 and September 1992, 1993, and 1994) that analyze global industry trends and competitiveness issues and provide 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 summary of changes in U.S. trade flows; highlights of recent major developments in the U.S. steel industry; and selected international steel industry comparisons.

Each of the April issues focuses 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. 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 regulations, technological developments, and globalization.

Three reports have been transmitted to the Committee to date—in September 1992, June 1993,[1] and September 1993. This report, the fourth in the series, focuses on current conditions in the U.S. industry, including information on recent developments in steel capacity, production, capital expenditures, environmental expenditures, spending on research and development, employment, and financial performance. 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.

The analysis is based on data developed from questionnaires sent to 220 producers and converters (i.e., companies that purchase certain steel mill products for conversion into other steel mill products—also known as steel processors) of steel mill products and from secondary sources. Responses were received from 165 producers and converters, which account for virtually all raw steel production (more than 95 percent) and include about 70 percent of steel converters surveyed.

Appendix A contains a more detailed overview of the structure of this report and notes on its product coverage and methodology. Appendices 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

This introductory chapter is followed immediately by a series of figures and tables providing highlights of U.S. and international steel industry consumption and trade. Figures 1 to 4 presenting *U.S. Steel Industry Highlights* identify monthly trends in U.S. steel shipments, imports, exports, and import penetration. The figures and tables highlighting *International Production and Consumption* and *International Production Trends* 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 Steel Industry Developments* highlights major events affecting both the U.S. and foreign steel industries. The *Special Focus* section examines current conditions in the U.S. steel industry, based on responses to questionnaires by producers and processors that provide insight on operating performance and competitive factors during 1992-93; this section includes an explanation of principal product category shifts in U.S. trade flows reflected by statistical tables contained in appendix E, tables E-1 through E-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.[2] The President undertook the

[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] Products include carbon and certain alloy (other than stainless or tool) steel and specialty steel (stainless and alloy tool steel) semifinished, plate, sheet and strip, bars

VRA program after the USITC made an affirmative determination in an investigation under section 201 of the Trade Act of 1974 (19 U.S.C. 2251) with respect to imports of certain carbon steel products.[3] 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.[4] Congress later passed the Steel 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 arrangements. However, this legislation made continuation of such authority subject to the condition that the steel industry continue to modernize its plant and equipment and provide for appropriate worker retraining. Specifically, 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.[5] 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.[6]

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 as part of the Uruguay Round negotiations under the 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 are continuing, but no agreement was reached in time to become part of the Uruguay Round package.[7] Since the end of the VRAs, the U.S. industry has filed a large number of petitions under the U.S. antidumping (AD) and countervailing duty (CVD) law with respect to many imported steel products once covered by the VRAs, including wire rope, bar, steel rail, pipe and tube, flat-rolled products, and other steel products once covered by the VRAs. Appendix F shows the status of AD and CVD investigations on steel products and ferroalloys since late 1991.

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[2]—*Continued*
and light shapes, wire rod, wire, wire products, structural shapes and units, rails and related products, and pipe and tube product categories covered in app. E, tables E-1 through E-37.

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

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

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

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

[7] The effect of the Uruguay Round on steel trade is addressed under *Recent Steel Industry Developments*.

Figure 1
U.S. average monthly steel shipments, 1989-93, and monthly steel shipments, 1993

1,000 short tons

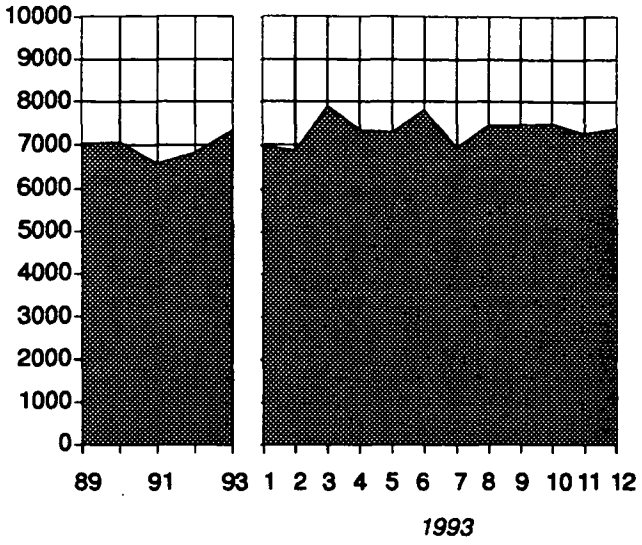


Figure 2
U.S. average monthly steel imports, 1989-93, and monthly steel imports, 1993

1,000 short tons

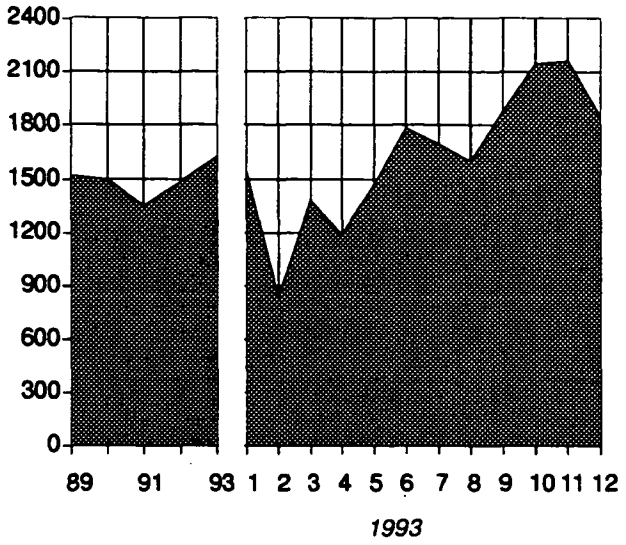


Figure 3
U.S. average monthly steel exports, 1989-93, and monthly steel exports, 1993

1,000 short tons

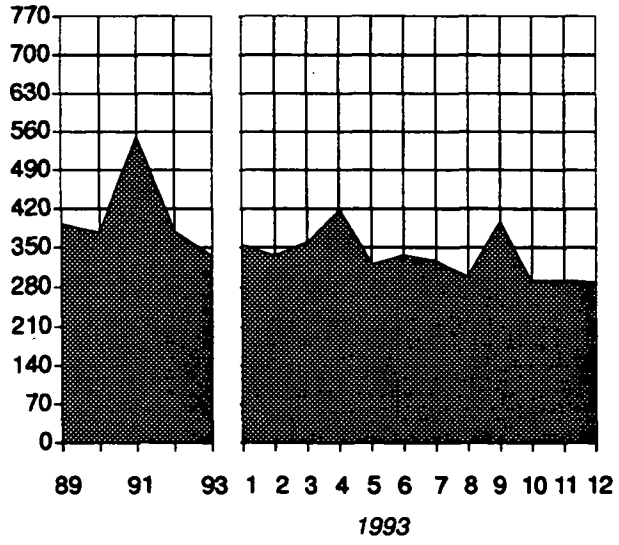
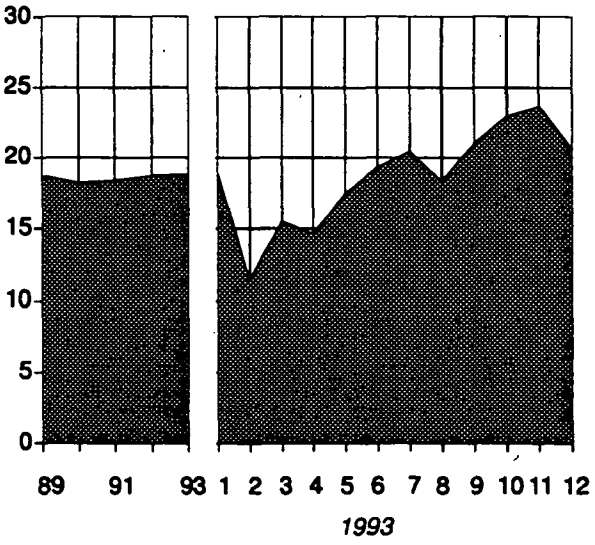


Figure 4
U.S. average monthly steel import penetration, 1989-93, and monthly steel import penetration,[1] 1993

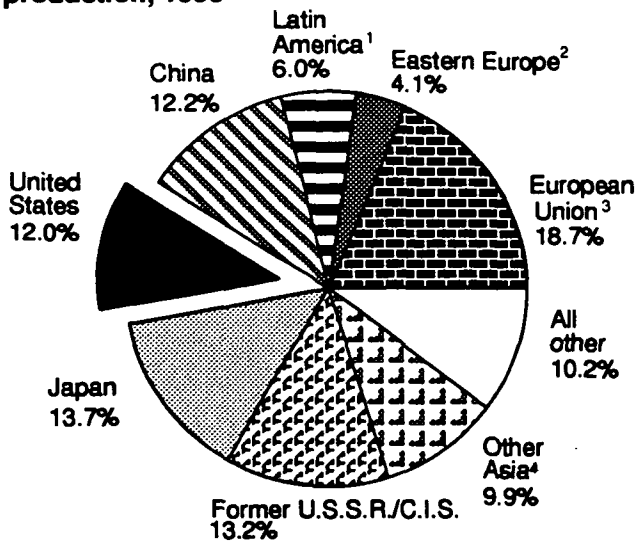
Percent



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

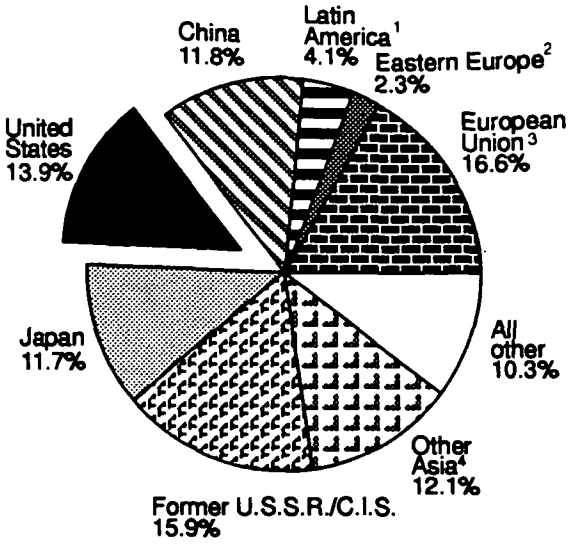
Source: Compiled from data of the AISI and official statistics of the U.S. Department of Commerce.

Figure 5
Raw steel: Geographic distribution of world production, 1993



Total : 726.0 million metric tons

Figure 6
Raw steel: Geographic distribution of world apparent consumption, 1992[5]



Total : 720.5 million metric tons

[1] Includes Mexico, Central America, South America and the Caribbean (including Cuba).
[2] Includes Albania, Bulgaria, Czech Republic, Slovak Republic, Hungary, Poland, and Romania.
[3] Formerly known as European Community. Includes former German Democratic Republic.
[4] All Asian countries excluding Japan, China, North Korea, and the Middle East region.
[5] Data for 1992 are the most recent data available.

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

Table 1
Raw steel: Production of top 20 steelmakers, 1983 and 1993

Company	Country	1983	1993	Volume change 1983-93	Percent change 1983-93
		Million metric tons			
Nippon Steel	Japan	26.8	25.8	(1.0)	(3.7)
Posco	South Korea	8.4	22.5	14.1	167.9
Usinor Sacilor	France	[1]17.1	17.6	0.5	2.9
British Steel	United Kingdom	12.7	12.3	(0.4)	(3.1)
NKK	Japan	11.4	11.1	(0.3)	(2.6)
Sumitomo	Japan	10.3	10.3	-	-
USS	United States	13.4	10.3	(3.1)	(23.1)
Kawasaki	Japan	10.4	10.1	(0.3)	(2.9)
Magnitogorsk	Russia	[4]	9.9	[4]	[4]
SAIL	India	6.1	9.8	3.7	60.7
ILVA	Italy	[2]12.2	9.8	(2.4)	(19.7)
Thyssen	Germany	9.3	9.6	0.3	3.2
Bethlehem	United States	9.7	9.3	(0.4)	(4.1)
Cherepovets	Russia	[4]	8.5	[4]	[4]
Anshan	China	[4]	8.5	[4]	[4]
BHP	Australia	5.6	8.0	2.4	42.9
LTV Steel	United States	[3]7.0	7.2	0.2	2.9
Shougang	China	[4]	7.0	[4]	[4]
Baoshan	China	[4]	6.9	[4]	[4]
Iscor	South Africa	5.4	6.8	1.4	25.9

[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 2
Raw steel: Average annual production, by specified countries/regions, by specified 5-year periods, 1959-93

Period	United States	European Union-12[1]	Japan	Principal steel-producing developing countries[2]	World total
			Million metric tons		
1959-63	90.42	96.32	25.22	20.35	349.22
1964-68	118.17	119.32	51.56	26.79	477.86
1969-73	122.88	147.18	96.05	39.58	614.50
1974-78	118.43	147.44	106.27	56.67	683.01
1979-83	95.75	136.81	104.31	85.37	695.59
1984-88	81.91	132.02	102.67	120.32	731.56
1989-93	85.72	136.36	105.11	163.98	746.93
			Percent of world production		
1959-63	25.89	27.58	7.22	5.83	100.00
1964-68	24.73	24.97	10.79	5.61	100.00
1969-73	20.00	23.95	15.63	6.44	100.00
1974-78	17.34	21.59	15.56	8.30	100.00
1979-83	13.77	19.67	15.00	12.27	100.00
1984-88	11.20	18.05	14.03	16.45	100.00
1989-93	11.48	18.26	14.07	21.95	100.00

[1] Formerly known as European Community. Includes former German Democratic Republic.
[2] Includes Brazil, People's Republic of China, India, Republic of Korea, Mexico, and Taiwan.

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

Table 3
Raw steel: Production, by specified countries/regions, 1989-93

Country/region	1989	1990	1991	1992	1993	Percent Change 1989-93
			1,000 metric tons			
Korea	21,873	23,125	26,002	28,054	33,016	50.9
Turkey	7,799	9,322	9,336	10,254	11,436	46.6
China	61,590	66,349	70,436	80,037	88,676	44.0
Taiwan	9,047	9,747	10,973	10,705	12,038	33.1
India	14,608	14,963	17,100	18,117	18,531	26.9
Mexico	7,851	8,726	7,883	8,436	9,135	16.4
Australia	6,735	6,676	6,141	6,877	7,830	16.3
Brazil	25,055	20,567	22,617	23,895	25,149	0.4
United States	88,834	89,723	79,738	84,322	87,142	(1.9)
EU-12[1]	140,142	136,758	137,449	132,279	132,404	(5.5)
Canada	15,458	12,281	12,987	13,933	14,385	(6.9)
Japan	107,909	110,339	109,649	98,132	99,623	(7.7)
Czechoslovakia	15,466	14,877	12,071	11,140	10,739	(30.6)
Poland	15,094	13,625	10,439	9,785	9,900	(34.4)
USSR/FSU	160,096	154,414	132,839	116,827	95,688	(40.2)
Total selected countries/regions	697,557	691,492	665,660	652,793	655,692	(6.0)
All other	88,641	78,588	69,597	68,470	70,330	(20.7)
World total	786,198	770,080	735,257	721,263	726,022	(7.7)

[1] Formerly known as European Community.

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

Table 4
Steel mill products: Average annual exports, by countries/regions of origin, by specified 5-year periods, 1973-92[1]

Period	United States	European Union-12[2]	Japan	Principal steel-producing developing countries[3]	Other	World
			1,000 metric tons			
1973-77	3,277	56,897	31,073	2,519	28,434	122,200
1978-82	2,618	64,207	29,661	7,645	35,915	140,046
1983-87	952	66,839	29,651	15,028	46,661	159,131
1988-92	3,916	72,836	19,232	24,142	50,733	170,859
			Percent of world exports			
1973-77	2.7	46.6	25.4	2.1	23.3	100.0
1978-82	1.9	45.8	21.2	5.5	25.6	100.0
1983-87	0.6	42.0	18.6	9.4	29.3	100.0
1988-92	2.3	42.6	11.3	14.1	29.7	100.0
			Percent of shipments[4]			
1973-77	3.7	47.9	33.7	6.6	([5])	23.1
1978-82	3.4	55.4	31.6	12.0	16.6	24.7
1983-87	1.5	61.5	31.5	17.0	19.6	26.9
1988-92	5.0	57.3	19.0	17.7	20.6	24.8

[1] Data for 1992 are the most recent data available.
[2] Formerly known as European Community. Includes all 12 countries for all years. Includes intra-EU trade.
[3] Includes Brazil, People's Republic of China, India, Republic of Korea, Mexico, and Taiwan.
[4] Derived by the 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 5
Steel mill products: Average annual imports, by countries/regions, by specified 5-year periods, 1973-92[1]

Period	United States	European Union-12[2]	Japan	Principal steel-producing developing countries[3]	Other	World
			1,000 metric tons			
1973-77	13,626	38,616	187	11,031	58,685	122,144
1978-82	16,202	41,232	1,312	14,839	67,074	140,660
1983-87	19,415	43,576	3,588	22,102	68,120	156,801
1988-92	16,087	60,345	7,320	22,152	66,424	172,328
			Percent of world imports			
1973-77	11.2	31.6	0.2	9.0	48.0	100.0
1978-82	11.5	29.3	0.9	10.5	47.7	100.0
1983-87	12.4	27.8	2.3	14.1	43.4	100.0
1988-92	9.3	35.0	4.2	12.9	38.5	100.0
			Percent of apparent consumption of finished steel			
1973-77	13.8	38.5	0.3	23.6	26.4	23.1
1978-82	17.7	44.4	2.0	20.9	27.1	24.7
1983-87	23.7	51.0	5.3	23.2	26.3	26.6
1988-92	17.7	52.6	8.2	16.5	25.4	25.0

[1] Data for 1992 are the most recent data available.
[2] Formerly known as European Community. Includes all 12 countries for all years. Includes intra-EU trade.
[3] Includes Brazil, People's Republic of China, India, Republic of Korea, Mexico, and Taiwan.

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

EU Restructuring Delay

Continuing efforts by the European Commission (EC) to reduce steelmaking capacity in the European Union (EU, formerly known as the European Community) have been further delayed. Steelmakers and the EC have agreed to postpone setting final capacity cuts until November 1994. The agreement, reached between industry executives and Martin Bangemann, the EC's industry commissioner, on March 23, 1994, concluded a series of difficult negotiations between the Commission and private steelmakers.

Under the agreement, the EC granted private sector steelmakers more time to finalize cuts in capacity, extending the deadline from April 22, 1994. In exchange, the EC will delay until November a decision on the status of a $264 million aid package offered to the industry to help with restructuring and capacity cuts; steelmakers have offered to forego any further requests for state aid until November.[8]

The restructuring plans target a total reduction of between 19 million and 26 million metric tons of carbon steel hot-rolled product capacity in the EU industry, about 10 to 15 percent of 1993 capacity. Reductions in capacity will be concentrated on coils, plates, heavy structurals, and light long products.[9] Most capacity reductions by private steelmakers are expected to result from mergers and takeovers. Restructuring by the EU industry will help reduce global excess capacity in steel. ■

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The Uruguay Round Will Affect Steel Trade

The multinational Uruguay Round Agreements (URA) of the GATT were recently completed and formal signing occurred on April 15, 1994, in Marrakesh, Morocco. A Multilateral Steel Agreement (MSA) was not part of the package; however, MSA negotiations continue in Geneva. Several areas of the URA package, however, will likely have an effect on steel trade, including the provisions on market access and those on antidumping and countervailing-duty measures.

[8] Gillian Tett, Andrew Baxter, and John Simkins, "Europe's Steelmakers Win More Time for Cuts," *Financial Times*, Mar. 25, 1994, p. 18.

[9] Official of the Commission of European Communities, USITC staff interview, Apr. 18, 1994.

Tariffs

In the URA, the United States, together with the European Union, Japan, Korea, Canada, Austria, Sweden, Finland, and Norway, agreed to eliminate tariffs on steel products over a 10-year period. Although Mexico did not agree to steel tariff eliminations in the URA, staged steel tariff elimination with U.S. products is already provided for under the North American Free Trade Agreement (NAFTA). Countries agreeing to "zero-for-zero" steel tariff elimination under the URA or with the United States under NAFTA collectively account for 77 percent of U.S. imports by value, and are the markets for 75 percent of the value of U.S. exports in this sector.

The current trade-weighted average of nominal U.S. tariffs for steel products is 5.2 percent with certain product areas having higher tariffs, notably carbon steel cold-rolled finished bars with a 7.5-percent tariff and specialty steel products with a trade-weighted average tariff of 8.2 percent.

In contrast to the nominal U.S. steel tariff range of 0.0 to 11.6 percent, steel tariffs in some of the major U.S. steel trading partners covered narrower ranges—0.0 to 8.2 percent in Japan, 0.0 to 10 percent in the EU, and 10 to 20 percent in Korea. For NAFTA countries, the steel tariffs applied to products from the United States are 0.0 to 12.5 percent in Canada and 0.0 to 15 percent in Mexico; these are being eliminated in stages under the Canada-United States Free-Trade Agreement (CFTA) and NAFTA.

Steel import tariff reductions under the URA will take place over a 10-year period during which domestic product differentiation and specialization in the steel area is expected to continue to increase, thereby lowering the impact of tariff changes. In addition, many large customers, notably automotive manufacturers, are making an effort to develop North American, rather than offshore, sources that can meet their specialized steel requirements.

On the export side, markets in Mexico and Canada, where tariffs on U.S. steel products are already being phased out under NAFTA and the CFTA, receive 65 percent of U.S. steel exports. However, in addition to benefits from the lowering of steel tariffs in non-NAFTA or non-CFTA markets, the sector is expected to benefit from the expected increased export sales by its customers, notably those manufacturing agricultural and other heavy equipment, which will in turn increase the domestic demand for steel.

Antidumping and Countervailing-duty Measures

Since the expiration of the voluntary restraint agreements (VRAs) on steel trade that limited steel exports to the United States, U.S. steel industries have sought and obtained relief under the antidumping (AD) and countervailing duty (CVD) laws. New Uruguay

Round agreements[10] relating to antidumping and countervailing duty actions will require changes in the U.S. AD and CVD laws through implementing legislation. The new agreements provide for, among other things, new definitions of "de minimis margins" and "negligible imports" for purposes of terminating investigations and a 5-year "sunset" on AD and CVD orders unless certain determinations are made upon review. All current AD and CVD orders, about one-fourth of which involve steel products, would be subject to review under these sunset provisions, in a manner to be defined in the implementing legislation.

The new agreements also define a subsidy and provide, for the first time, three areas of nonactionable subsidies. According to the Executive Summary of the results of the Uruguay Round,[11] nonactionable subsidies include certain assistance for research and predevelopment activity, limited to 75 and 50 percent of costs, respectively; certain assistance to disadvantaged regions; and certain assistance to adapt existing facilities to meet new environmental standards, limited to 20 percent of the costs. U.S. steel firms are concerned that these are exactly the types of foreign subsidies that are most likely to be provided in the future and advocate, among other things, that implementing legislation narrowly define nonactionable categories and not allow nonactionability for subsidies that predate the effective date of the URA.[12] Generally, however, state assistance given to a specific firm to build a new steel plant in a particular state or area would continue to be actionable as would other domestic subsidies if there is a determination of material injury or threat of material injury to the steel industry of the importing country. On export subsidies, the new agreements would prohibit such subsidies; they would be actionable without the injury determination now required.

As noted, U.S. implementing legislation is required in order to bring the U.S. law into conformity with the Uruguay Round AD and CVD agreements. A large segment of the industry, including integrated steel producers, pipe producers, and specialty steel producers, advocates changes which go further than conformity. According to specialty producers, implementing legislation should add provisions that "go beyond the issues specifically addressed in the GATT agreement" to "improve the opportunity for American industries and their workers to obtain redress from unfair trade laws."[13] Integrated producers advocate an implementing bill that achieves similar objectives and also "closes [perceived] loopholes in existing U.S. law and practice."[14] Steel service centers,[15] however, note that U.S. AD and CVD laws are used as models for laws in Mexico and other countries. Therefore, they argue, some of the changes advocated by the industry may also make it more difficult for the U.S. industry to win AD and CVD cases brought against U.S. exports in other countries in the future.[16]

Multilateral Steel Negotiations

Although an MSA has not been concluded, the draft MSA text has several provisions that, if agreed to multilaterally, would go beyond the URA for the steel industry. These include providing stricter disciplines on the use of subsidies (prohibiting, for example, regional subsidies to a steel industry, whether or not located in a disadvantaged region), reducing further both government and private sector nontariff steel trade barriers, providing a more global zero-for-zero steel tariff agreement, and providing a faster, more effective, method of dispute settlement. The most recent MSA negotiations were held in April 1994 and are tentatively scheduled to continue in June 1994. ■

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U.S. Metallurgical Coke Industry Faces Increasing Competitive Challenges

The U.S. coke industry faces several major challenges, including decreasing consumption, aging facilities, increasingly stringent environmental regulations, increased imports, and generally declining prices, according to an analysis of the industry recently completed by the U.S. International Trade Commission (ITC) in response to a request by the U.S. House of Representatives Committee on Ways and Means.[17]

[10] Agreement on Implementation of Article VI of GATT 1994 and Agreement on Subsidies and Countervailing Measures, Final Act Embodying the Results of the Uruguay Round of Multilateral Trade Negotiations.

[11] Attachment to Memorandum from the President to the Speaker of the U.S. House of Representatives and the President of the U.S. Senate, Dec. 15, 1993.

[12] Testimony of Thomas Usher, President U.S. Steel Group, USX, on behalf of the American Iron and Steel Association, before the Committee on Finance, U.S. Senate, Mar. 9, 1994.

[13] Testimony of Robert Heaton, Chairman of the Board of Directors, Specialty Steel Industry of the United States, before the Committee on Ways and Means, Subcommittee on Trade, U.S. House of Representatives, Feb. 8, 1994.

[14] Testimony of Curtis Barnette, Chairman, Bethlehem Steel, on behalf of the American Iron and Steel Institute, before the Committee on Finance, U.S. Senate, Mar. 23, 1994.

[15] Steel service centers are companies that purchase both domestic and imported steel, which they typically further process and distribute.

[16] Charles Blum, counsel for Steel Service Center Institute, conversation with USITC staff, Mar. 14, 1994.

[17] USITC, *Metallurgical Coke: Baseline Analysis of the U.S. Industry and Imports* (investigation No. 332-342), USITC publication 2745, Mar. 1994.

The ITC report also examined the coke industries in Japan, China, Poland, and the Czech Republic and found that these international competitors face many of the same challenges as the U.S. coke industry. Other highlights of the report follow in summary fashion.

Production of coke in the United States declined between 1985 and 1992, falling from 25.8 million metric tons in 1985 to 21.2 million metric tons in 1992. This decline in production is mainly attributed to decreased integrated steel production, improvements in blast furnace efficiency, plant closings, and the advancing age of coke batteries.

New environmental regulations stemming from the 1990 Clean Air Act Amendments have begun to raise operating and capital costs for domestic coke producers. Further cost increases are expected as additional regulations take effect over the next two decades.

Imports represented 8 percent of total U.S. consumption in 1992, up from 4 percent in 1990. The major sources of coke imports in 1992 were Japan, Australia, and Canada, accounting for 80.4 percent, 15.9 percent, and 2.5 percent of imports, respectively. The ability of imports to compete in the U.S. market seems to be limited currently to sites near ports or distant from domestic coke sellers.

Although imports of coke into the U.S. market have varied widely from year to year, they still have several general characteristics: (1) imports are from a limited number of sources, (2) coke is imported by a limited number of importers/consumers, (3) most current import sales are the result of long-term contracts, and (4) most imports are sold to facilities that at one time were self-sufficient in coke production but have shut down their coke ovens; thus, the imports replace captive production.

Even though captive consumption still dominates the U.S. coke market, coke in the United States is increasingly being traded on the open market. The increasing willingness of steelmakers to rely on non-captive sources for coke supplies should afford more opportunities for import competition as well as for merchant coke producers. When examining open market sales alone, 1992 imports accounted for approximately 18 percent of the coke purchased by consumers, essentially the same share as in 1990.

The Japanese coke industry is facing challenges similar to those facing the U.S. industry, including decreasing domestic consumption and aging capacity. With coke capacity reported at 47.4 million metric tons, Japan has one of the world's largest coke industries.

Exports of coke from Japan totaled 3.1 million metric tons in 1992, approximately 7 percent of production, of which roughly half went to the United States. Over the past 10 years, Japan has exported coke to a wide variety of countries, although the United States, Brazil, and Romania have consistently been Japan's largest export markets.

China is the world's largest coke producer. China's total output of both metallurgical and non-metallurgical coke amounted to 78 million metric tons during 1992. A further expansion of its coking capacity is expected, but projected increases in steelmaking production will likely consume most of the increase. After an absence from the U.S. market since 1989, imports of metallurgical coke from China resumed in 1993.

Poland and the Czech Republic are the only net exporters of coke in the former Eastern bloc. Coke ovens in these countries are relatively new, and both countries have abundant coking coal reserves to support projected levels of coke production. Although both cokemaking and steelmaking capacity are declining in both Poland and the Czech Republic, cokemaking capacity is declining more slowly than steel capacity, thereby creating a surplus for export. In both countries, the imposition of environmental cleanup costs is increasing the costs of coke production and in some cases may result in the closing of facilities. There have been no recent imports of Czech coke to the U.S. market and no imports from Poland since 1989. Imports from Poland are expected to resume in early 1994. ■

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Market Conditions

Carbon and Certain Alloy Steel

Growth in demand from the automotive, construction, and appliance industries, all principal consumers of steel, led to a 9-percent increase in U.S. apparent consumption of carbon and certain alloy steel in 1993 compared with 1992 (table 6); the growth was supplied by increases in both domestic shipments and imports of carbon and certain alloy steel products. Shipments to these three industries rose by 14 percent, 11 percent, and 5 percent, respectively, from 1992 to 1993. Steel consumption by the U.S. automobile industry increased in 1993 because of higher vehicle production levels and the increased steel content of some vehicles, partially because some automobile parts that were designed in plastic have returned to steel (particularly lightweight steels). Gradually increasing construction activity and the nascent use of steel framing rather than wood framing for new houses has also had a positive effect on steel consumption. Other industries receiving increased steel shipments include rail transportation (16 percent); oil and gas (14 percent); agriculture (11 percent); machinery, industrial equipment, and tools (11 percent); and containers, packaging, and shipping materials (8 percent). Industries receiving decreased shipments include shipbuilding and marine equipment (down by 19 percent) and aircraft and aerospace (7 percent).[18]

Stainless and Alloy Tool Steel

U.S. apparent consumption of stainless and alloy tool steel in 1993 increased by 15 percent compared with 1992 (table 6), reaching the highest level during 1989-93. The increase in consumption was supplied primarily by imports. Shipments to the automotive industry, where stainless steel is used in catalytic converter systems and in certain trim and parts (e.g., air bag inflators), increased by 26 percent, accounting for most of the increase in shipments. Other industries with significant increases include construction and contractors' products (up by 15 percent), in which stainless steel is being promoted in roofing, doorway, and wall panel applications.

Market Impact of U.S. Trade

The market for steel and, accordingly, U.S. imports and exports of steel mill products and certain fabricated steel products were influenced by the U.S. economic recession, which began in late-1990 and moderated by mid-1991,[19] and by an economic recession beginning in late-1991 in other major steel-consuming nations, notably East Asian countries. Reflecting this, U.S. exports as a share of shipments for all steel products declined from 9 percent in 1991 (the highest level in 20 years) to 5 percent in 1993. This decline in export tonnage, coupled with increased imports, caused the deficit in steel products to increase by 67 percent from 1991 to 1993. However, domestic shipments also increased from 1991 to 1993, and thus import penetration in the U.S. market rose only slightly from 19 percent to 20 percent. The data discussed in the remainder of this section are based on the data in appendix E, tables E-1 through E-37.

Imports

Carbon and Certain Alloy Steel

Imports rose by 24 percent from 16.4 million short tons in 1991 to 20.4 million short tons in 1993 (table E-2), concurrent with a sharp increase in steel demand in the United States. This followed improvements in U.S. cost competitiveness and relatively strong demand in foreign markets during 1990-91 that 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 (table E-2). Accompanying the renewed rising trend in imports in 1992-93 were antidumping and countervailing duty cases filed by U.S. producers. In July 1993, the USITC found that there was no material injury or threat of material injury from $1.7 billion worth of imports of certain flat-rolled steel products, representing half of the total value of trade ($3.4 billion) subject to the antidumping and countervailing duty cases filed against various foreign producers. The negative determinations meant that no countervailing duties or antidumping duties were imposed on the products involved in the investigations in which the Commission made negative determinations.

A strong recovery in U.S. automobile production largely contributed to a 13-percent increase in U.S. imports from Canada of carbon and certain alloy steel products from 1992 to 1993 (table E-17). Canada is the single largest country supplier of U.S. imports, supplying 25 percent of total carbon and certain alloy steel imports on the basis of quantity in 1993.

On a regional basis, the EU, East Asia, and Latin America are the largest suppliers of U.S. imports, accounting for 34 percent, 16 percent, and 13 percent, respectively, of imports of carbon and certain alloy steel on the basis of quantity in 1993 (table E-17). These shares remained steady compared with 1992 for Latin America, but declined by 10 percentage points for East Asia, and rose by 8 percentage points for the EU. In East Asia, major import suppliers such as Japan and Korea directed more of their exports to China where steel demand has expanded substantially in recent years. An ongoing recession in the EU has led to weak steel demand in that region and to increased exports from the EU to the United States.

[18] Compiled from data of the American Iron and Steel Institute.

[19] The Economic Report of the President, February 1992, pp. 37-42.

Table 6
Steel: U.S. shipments, imports, exports, apparent consumption, import penetration, exports as a percent of shipments, and trade balance, 1989-93

Year	U.S. shipments	Imports	Exports	Apparent consumption[1]	Import penetration[2]	Exports/ shipments	Trade balance	
							Volume	Value
	1,000 short tons				*Percent*		*1,000 short tons*	*Million dollars*
Carbon and certain alloy steel								
1989	82,720	17,948	4,657	96,011	18.7	5.6	(13,291)	(6,036)
1990	83,407	17,727	4,718	96,416	18.4	5.7	(13,008)	(5,386)
1991	77,341	15,953	6,537	86,758	18.4	8.5	(9,416)	(3,788)
1992	80,776	17,305	4,410	93,671	18.5	5.5	(12,895)	(4,548)
1993	86,799	19,674	4,175	102,298	19.2	4.8	(15,499)	(5,184)
Stainless and alloy tool steel								
1989	1,539	397	121	1,815	21.9	7.9	(275)	(716)
1990	1,503	417	122	1,798	23.2	8.1	(295)	(637)
1991	1,500	428	175	1,754	24.4	11.6	(254)	(535)
1992	1,578	475	135	1,918	24.8	8.6	(340)	(653)
1993	1,601	720	113	2,208	32.6	7.1	(607)	(1,016)

[1] Apparent consumption is defined as shipments plus imports minus exports.
[2] Import penetration is defined as imports as a percent of apparent consumption.

Note.—Because of rounding, figures may not calculate to the results shown. Import penetration and exports/shipments percentages are based on quantity figures.

Source: Compiled from data of the American Iron and Steel Institute and official statistics of the U.S. Department of Commerce.

On a product basis, imports in most product categories in 1993 increased from 1992, with the most significant change occurring in semifinished imports, which more than doubled. Linked to this development, and a notable exception to the rise in imports, was a 16-percent decline in imports of sheet and strip in 1993. This decline is reportedly due in part to the preliminary affirmative determinations by the U.S. Department of Commerce (Commerce) in December 1992 (CVD) and February 1993 (AD) that there were sales of imports, the production of which was subsidized, and/or sales of imports at less than fair value in several CVD and AD investigations on certain flat-rolled products.[20] The decline also reportedly reflects efforts by EU and East Asian exporters to restrain their exports to the United States following the USITC's July 1993 negative final determinations on a number of these investigations so as to avoid creating conditions that might encourage U.S. producers to file new petitions.[21] Foreign producers have in part replaced their exports of flat-rolled products to the United States by increasing their exports of slab, the raw material for producing flat-rolled products. The ability of U.S. producers of flat-rolled products to supply growing demand in the automotive sector has been constrained by insufficient melting and casting capacity and by planned equipment outages.[22] Domestic steel producers, including some who joined in the filing of AD/CVD petitions, are importing slabs for further processing to raise their output of finished products, thereby shifting the composition of steel import tonnage to lower-value-added products.

Stainless and Alloy Tool Steel

Total imports of stainless and alloy tool steel rose by 73 percent between 1990 and 1993 (table E-2), with the majority of the growth, 52 percent, occurring between 1992 and 1993. U.S. imports' share of apparent U.S. consumption rose from 25 percent in 1992 to 33 percent in 1993 (table E-5). This increase occurred despite the announcement by the domestic specialty steel industry that it was considering filing AD/CVD petitions.[23] Industry sources have attributed the sharp increase in imports in part to relatively higher U.S. prices for certain stainless steel products. In addition, 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.

The increase occurred in all product categories, with imports of stainless semifinished products (which are generally hot-rolled into sheet) showing the largest increase during 1993, rising by more than 200 percent over their level in 1992 and elevating their share of apparent U.S. consumption to 75 percent. The next largest increase occurred in imports of stainless sheet and strip, which rose by 59 percent to 360,000 short tons (24 percent of apparent consumption) during 1993. On a regional basis, the EU accounted for the largest share of the increases, supplying 39 percent of the growth in imports of semifinished products and 54 percent of the growth in sheet and strip imports. Industry sources have attributed the increase in imports from the EU to excess production capacity for stainless steel in Western Europe and to recessionary economic conditions and reduced demand for steel in the EU. 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.

Exports

Carbon and Certain Alloy Steel

In 1991, U.S. exports of carbon and certain alloy steel mill products reached their highest level in 20 years, 6.5 million short tons, representing 8.5 percent of shipments (table 6). 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 36 percent to 4.2 million short tons from 1991 to 1993. The decrease reflects both a better domestic market and less favorable global economic conditions. Neighboring Canada and Mexico remained the primary export markets, together receiving 65 percent of U.S. exports in 1993 (table E-17). A significant exception to the overall decline in exports from 1992 to 1993 is the renewal of Taiwan as a major growth market in 1993, exceeding its 1992 export level by five times although not reaching the peak growth that occurred from 1990 to 1991. The uneven trend reflects the fluctuations in the Taiwan construction industry's demand for steel, which rose sharply in 1993.[24]

Overall, U.S. exports to East Asia fell by 72 percent from 1991 to 1993, primarily because of steep declines in exports to Japan and Korea (table E-17).[25] The reduction in shipments to Japan can be attributed to falling demand from the engineering, construction,

[20] Commerce's affirmative preliminary determinations meant that Commerce ordered the U.S. Customs Service to impose provisional CVD and/or AD duties on the products involved in the investigations in which Commerce made affirmative determinations. The duties are returned to the importers in the event of a negative final determination by Commerce or the Commission.

[21] "Slab Prices Drop as EU Boosts U.S. Strip Sales," *Metal Bulletin*, Nov. 29, 1993.

[22] PaineWebber, *Steel Industry*, Jan. 6, 1994.

[23] "Specialty Steel Imports Climbing," *American Metal Market*, Oct. 4, 1993.

[24] "Construction Tempts Taiwan's Minimills to Expand," *Metal Bulletin Monthly*, Nov. 1993.

[25] Korea's export levels are included in the category "all others" in table E-17. In 1991, exports to Korea were 861,000 tons and fell to about 27,000 tons in 1993.

industrial machinery, and automotive sectors.[26] Steady capacity expansion in Korea has enabled that country to supply its steel needs better internally and to reduce its reliance on imports.

Exports to Latin America, the United States' largest export market, declined by 17 percent from 1991 to 1993. Mexico received 79 percent of these exports in 1993. Exports to the EU declined steadily by 44 percent from 1991 to 1993. Recessionary conditions in the region have contributed in part 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.[27] 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. Counter to the positive effects of these developments on exports, U.S. producers of stainless steel have indicated that exports declined in 1992 and 1993, largely because of recessionary economies in major export markets.

As with carbon steel, exports of stainless and alloy tool steel peaked in 1991, then fell off in 1992 and 1993 (table E-26). There was a 66-percent drop in exports to Mexico from 1992 to 1993 which contributed to a 60-percent drop in exports to the Latin American region during that period. Reduced exports of stainless sheet and strip accounted for the bulk of the decline in exports to Mexico. This may be the result of recently increased stainless flat-rolled capacity in Mexico, which has enabled that country to supply more of its stainless steel needs internally. Canada is the largest market for U.S. exports of these products, accounting for 42 percent of exports in 1993. On a regional basis, shipments to Latin America, East Asia, and the EU accounted for 18 percent, 14 percent, and 13 percent, respectively, of exports that year.

Factors Influencing Producers' Exports

Firms responding to the Commission's annual survey provided information on the quantity and value of their exports for 1992-93 and identified new country markets supplied in these years. Producers were asked to rank factors affecting their ability to expand exports, to determine whether their exports had been adversely affected by nontariff barriers, and to rank the relative importance of government policy factors that may affect their ability to expand exports. A total of 109 firms provided information, presented in tables 7-9, although each section of the questionnaire may not have been completed.

Attempts by steel producers to develop new export markets appear to be significant, as 24 firms reported exporting to new[28] country markets in 1993. Canada and Mexico remained the leading new markets although Brazil and Venezuela were also frequently cited as they were a year ago; consistent with less favorable export market conditions, the number of countries offering new prospects were much fewer than listed a year ago.[29] Firms responding listed 31 countries as new markets, as shown by the following tabulation (in percent):[30]

New market	Percentage of times cited
Canada	9
Mexico	9
Brazil	7
United Kingdom	7
Germany	4
Jamaica	4
Trinidad	4
Venezuela	4
All other	52

On a regional basis most of the new markets were countries in Latin America (34 percent), Western Europe (17 percent), the Caribbean (14 percent) and East Asia (12 percent), although new markets were reported in virtually every region of the world. U.S. exports of steel mill products reported in questionnaires were 2.0 million short tons ($1.6 billion) in 1993, representing 48 percent of total U.S. steel exports (based on quantity) that year.

Among those factors identified as "very important" in influencing producers' ability to expand steel mill product exports, relative prices were the most significant (table 7). In contrast, capacity constraints as a factor restraining export sales were cited as unimportant by almost half of the firms, despite

[26] The WEFA Group, *U.S. & World Steel Executive Report*, Oct. 1992 and *Steel Market Outlook*, second quarter 1993.

[27] For example, France's Usinor Sacilor (Ugine stainless steel division) acquired J&L Specialty Products, a major U.S. producer of stainless steel flat-rolled products, in 1990. (Ugine recently announced plans to go public with J&L by means of a stock offering.) Korea's Sammi Steel owns Al Tech Specialty Steel Corp., a major U.S. producer of stainless steel bars.

[28] For the purposes of this report, new country markets are those to which questionnaire respondents had not exported in the past.

[29] For further information, see USITC, *Steel Semiannual Monitoring Report* (investigation No. 332-327), USITC publication 2655, June 1993, p. 15.

[30] Compiled on the basis of data submitted in response to USITC questionnaires.

questionnaire data indicating that the steel industry operated at approximately 86 percent raw steelmaking capacity.[31]

Nontariff barriers (NTBs) apparently did not pose significant problems for most of the firms responding (table 8) and were identified along with tariff barriers as increasingly unimportant in affecting export opportunities.[32] Government procurement policies were cited as the most common NTBs by only 12 percent of total responses. Minimum domestic content was the only other NTB cited by a significant number of firms, although quotas were cited by an increased share of firms responding compared to a year ago. Some companies cited other NTBs such as cartel practices by foreign producers that hinder U.S. exports by impeding sales by U.S. companies.

Producers were asked to rank the importance of the implementation of the CFTA, the implementation of the NAFTA, the expected outcome of the MSA negotiations, and the expected outcome of the negotiations on the Uruguay Round of the GATT on their ability to expand exports. Also, each firm was asked to determine the nature of the effect as positive, negative, or no discernible effect.

The majority of companies perceived each of these government policy initiatives as having either a positive effect or no discernible effect on their ability to expand exports (table 9). An increased share of

[31] This level of capacity utilization is closer to maximum productive capability than it may seem. Capacity utilization, according to AISI, peaked at 89 percent (1988) in a period of extremely high demand, leading some analysts to believe that production at such levels represents full, or nearly full, effective production capability. See, for example, Peter F. Marcus and Karlis Kirsis, *Capacity Monitor #10*, World Steel Dynamics, Oct. 19, 1992.

[32] For further information see USITC, *Steel Semiannual Monitoring Report*, USITC Publication 2655, pp. 16-17.

Table 7
U.S. producers' perceptions of the factors influencing their ability to expand steel mill product export levels: Share of responding firms choosing each level of importance, and share of total questionnaire responses that commented on each factor, 1993

(Percent)

Export factor	Very important	Important	Somewhat important	Unimportant	Percent response
Capacity constraints	17	15	25	44	100
Customer product specifications	13	24	36	28	99
Exchange rates	30	39	20	11	99
Home-market demand	24	32	26	18	100
Relative price[1]	69	23	6	2	100
Nontariff barriers	18	33	24	25	98
Tariff barriers	35	34	19	13	97
Other[2]	55	0	18	27	25

[1] Relative to prices in other markets.

[2] In most cases, respondents cited high freight costs and complicated credit terms.

Note.—Because of rounding, shares may not total to 100 percent.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 8
Share of total questionnaire responses that have reportedly encountered nontariff barriers to steel mill product exports[1], 1993

(Percent)

Nontariff barriers	Share of responses
Government procurement policies	12
Licensing requirements	6
Minimum domestic content requirements	10
Quotas	6
Restrictions on foreign direct investment	3
Other[2]	6

[1] There were 146 questionnaire respondents.

[2] Respondents cited Japanese cartel practices, product approval requirements, and packaging requirements.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 9
U.S. producers' perceptions of the effect of government policy on their ability to expand steel mill product export levels, number of respondents choosing each effect, and the share of respondents choosing each level of importance for each effect, 1993

Government policy	Positive effect					Negative effect					No discernible effect				
	No. of respondents	Very important	Important	Somewhat important	Unimportant	No. of respondents	Very important	Important	Somewhat important	Unimportant	No. of respondents	Very important	Important	Somewhat important	Unimportant
		Percent					Percent					Percent			
Implementation of the U.S.-Canada Free-Trade Agreement	55	36	36	25	2	6	17	33	50	0	31	6	6	29	58
Implementation of the North American Free-Trade Agreement	62	35	34	27	3	4	25	50	25	0	26	0	15	27	58
Multilateral Steel Agreement negotiations	26	42	38	19	0	14	50	29	21	0	46	9	7	30	54
Uruguay Round negotiations	19	37	26	32	5	14	64	29	7	0	51	6	10	24	61
Other[1]	3	100	0	0	0	2	100	0	0	0	0	0	0	0	0

[1] For positive effect, respondents cited proposed revisions to U.S. tax policy and regulations, and financial aid for the Commonwealth of Independent States directed to the oil and gas industries; for negative effect, respondents cited unfair trade practices by foreign governments.

Note.—Because of rounding, shares may not total to 100 percent.

Source: Compiled from data submitted in response to questionnaires of the USITC.

firms responding considered NAFTA as having a positive effect whereas the majority of respondents continued to perceive the negotiation of an MSA and of a Uruguay Round agreement as having no discernible effect on their ability to expand steel exports.[33] However, the majority of those companies that perceived that the Uruguay Round negotiations had a negative effect on their ability to expand exports regarded it as being very important.

Production, Capacity, and Capacity Utilization

Raw steel production increased by about 5 percent from 93 million tons in 1992 to 98 million tons in 1993, in response to increased demand from the automotive, construction, and appliance industries. As a result, capacity utilization rose from 79 percent to 86 percent during 1992-93. Also contributing to the increase in capacity utilization was a decrease in U.S. raw steelmaking capacity by about 3 percent, to 114 million tons during this period (table 10). This represents a reversal in a series of capacity increases in recent years. Capacity was reduced because of continuing efforts to modernize, which removed capacity at times during the year; and by changes in product mix toward more sophisticated products requiring additional processing, but requiring less raw steelmaking capacity. Capacity is expected to increase in 1994-95 as several new flat-rolled, and bar and rod mills come on line.

Continuous strand-cast production[34] continues to rise as a share of total U.S. semifinished steel production. Recently constructed steel mills and modernization projects all include continuous strand casters. Significant advances have been made in steel metallurgy, casting, and rolling technology that reduce the relative proportion of certain types of steel and of shapes and sizes that are not amenable to continuous strand-casting.[35] Moreover, continuous strand-casting generates less scrap and provides significant time, labor, and energy savings relative to ingot casting.[36]

More than 86 percent of the steel produced in the United States in 1993 was continuously cast, compared with 83 percent in 1992, as shown in the following tabulation of data received in response to Commission questionnaires:

Item	1992	1993
Total raw steel production (million tons)	92.9	97.8
Continuously cast production (million tons)	[1]77.3	84.5
Share of production continuously cast (percent)	[1]83.2	86.4

[1] Revised.

The United States' continuous casting ratio remains lower than that achieved in other major producing countries, including: the EU (92 percent continuously cast in 1992); Japan (95 percent); and Korea (97 percent).[37]

Carbon and Certain Alloy Steel

Among carbon steel products, capacity utilization during 1993 increased in almost all product categories and was highest among bars and light structurals (88 percent) (table 11) and medium and heavy structurals (87 percent), of which the construction industry is a major consumer. Capacity utilization during 1993 was also high for sheet and strip products (84 percent) supplying consumers such as the automotive and appliance industries. Capacity utilization was lowest for pipes and tubes (64 percent) and rails and rail products (54 percent), items for which markets generally were weak in recent years.

Although integrated steel producers remained the primary producers of flat products—sheet, strip, and plate—during 1992-93, they were not the principal suppliers of other steel mill products. This reflects the continued movement of minimills[38] and steel

[33] For further information see *Steel Semiannual Monitoring Report*, June 1993, p. 18.

[34] In continuous strand casting, semifinished steel shapes (slabs, blooms, and billets) are cast directly in the desired cross-sectional dimensions and are cut to desired length following solidification.

[35] Rimmed steel substitutes are one example of a steel that has largely supplanted the ingot-based product. USITC, *Certain Special Quality Carbon and Alloy Hot-Rolled Steel Bars and Rods and Semifinished Products from Brazil* (investigation No. 731-TA-572), USITC publication 2662, July 1993, p. I-9.

[36] In the ingot-based process, molten steel is poured or "teemed" into ingot molds. As the steel begins to solidify, the mold is stripped from the ingot and the ingot is transferred to a "soaking pit" where the temperature of the steel is equalized. Following removal from the soaking pit, the ingots are hot-rolled on a primary breakdown mill to slab, bloom, or billet sizes. As noted earlier, continuous strand-casting bypasses several steps of the ingot-based process by casting steel directly into semifinished shapes in the desired cross-sectional dimensions. Continuous strand-casting possesses many benefits when compared to the ingot-based process, including improved product quality, increased yield, decreased energy consumption, and less pollution. However, the ingot-based process may be preferred to continuous-strand casting to produce certain products because of their desired sizes or chemistry.

[37] International Iron and Steel Institute (IISI), *Steel Statistical Yearbook 1993* (Brussels), 1993.

[38] This term is imprecise because of adoption of electric furnace steelmaking by former-integrated producers (who historically utilized only coke ovens, blast furnaces, and basic oxygen or open hearth furnaces to produce steel) and expansion of product mix by nonintegrated steelmakers (who melt scrap in electric arc furnaces) beyond typical minimill products.

Table 10
Steel: U.S. producers' and converters' reported capacity, production, and capacity utilization, 1992 and 1993

Item	Capacity		Production		Capacity utilization		Percentage change	
	1992	1993	1992	1993	1992	1993	Capacity	Production
	1,000 tons				Percent			
Carbon and certain alloy steel:								
Cokemaking	[1]24,451	19,739	20,584	18,501	79	94	(19)	(10)
Ironmaking	[1]67,795	62,287	50,889	53,554	77	86	(8)	5
Steelmaking:								
Basic oxygen process & other	72,733	69,392	58,438	60,314	80	87	(5)	3
Electric furnace	42,040	41,382	32,179	35,257	77	85	(2)	10
Products:								
Sheet and strip:								
Hot-rolled	67,566	64,964	51,732	56,431	77	87	(4)	9
Cold-rolled	39,750	38,626	28,061	30,835	71	80	(3)	10
Galvanized	13,250	12,694	10,498	10,772	79	85	(4)	3
Other coated	5,635	6,124	4,822	4,972	86	81	9	3
Plates	6,928	6,404	4,535	4,925	65	77	(8)	9
Bars and light structurals:								
Hot-finished	15,509	16,695	12,627	14,940	81	90	8	18
Cold-finished	[1]1,920	1,413	[1]1,425	1,120	74	79	(26)	(21)
Medium and heavy structurals[2]	8,506	8,096	5,944	7,002	70	86	(6)	18
Pipes and tubes:								
Seamless pipes and tubes	2,253	2,434	1,238	1,762	55	72	8	42
Welded pipes and tubes	6,924	6,254	3,964	3,763	57	60	(10)	(5)
Rails and rail products	1,311	1,317	701	714	53	54	0.5	2
Wire rods	6,491	6,439	5,352	5,640	82	88	(0.8)	5
Wire	3,293	3,516	2,210	2,324	67	66	7	5
Wire products	1,931	1,531	1,123	896	58	59	(20)	(20)
Stainless and alloy tool steel:								
Electric furnace	2,810	3,123	2,259	2,216	80	71	11	(2)
Products:								
Sheet and strip:								
Hot-rolled	2,063	2,065	1,187	1,295	58	63	[3]	9
Cold-rolled	1,705	1,876	1,136	1,242	67	66	7	9
Plates	228	192	111	129	49	67	(16)	16
Bars and light structurals:								
Hot-finished	130	146	67	114	52	78	12	70
Cold-finished	221	163	107	140	49	86	(26)	31
Pipes and tubes	95	92	63	63	66	68	(3)	0
Wire rods	69	66	21	26	30	39	(4)	24
Wire and wire products	48	48	34	39	72	81	0	15

[1] Revised.
[2] Structural shapes with a cross-section exceeding 3 inches.
[3] Less than 0.5 percent.

Source: Compiled from data submitted in response to USITC questionnaires.

Table 11
Carbon and certain alloy steel: Weighted average capacity utilization among major product groups, 1992 and 1993

(Percent)

Item	1992	1993
Sheet and strip	75	84
Plate	65	77
Bars and light structurals	81	88
Medium and heavy structurals[1]	70	87
Pipes and tubes	57	64
Rails and rail products	53	54
Wire rod, wire, and wire products	74	77

[1] Structural shapes with a cross-section exceeding 3 inches.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

converters[39] into markets, such as medium and heavy structurals, which were once predominantly supplied by the integrated mills. The production of merchant bars, structurals, and wire rods was dominated by minimills during 1992-93, with minimills accounting for more than 79 percent of wire rod production and for more than 85 percent of total medium and heavy structural production and of hot-rolled bar production in 1993.[40]

Minimills are also expanding into sheet production, spurred by the success of Nucor Corp.'s thin-slab-casting facilities in Crawfordsville, IN, and Hickman, AR. Nucor has announced plans to add 1.4 million tons of capacity to its two existing thin-slab facilities and to enter a joint venture with Oregon Steel Mills Inc. to construct a 1.0 million-ton-per-year mill on the West coast. Dofasco Inc., Canada's leading integrated steelmaker, has entered into a joint venture with Co-Steel, a Canadian minimill firm, to build a thin-slab casting facility in the United States. Acme Metals Inc., Birmingham Steel Corp., Chaparral Steel Co., IPSCO Inc. (Canada) and North Star Steel Co. have all indicated an interest in construction of thin-slab facilities in the near future. Steel converters, finding their niche in less capital-intensive product markets, were the leading producers of fabricated steel mill products such as pipe and tube during 1992-93.

Stainless and Alloy Tool Steel

Capacity to produce stainless and alloy tool steel products declined in a number of product categories during 1992-93 (table 10), reflecting in part the ongoing restructuring and product line realignment in this segment of the industry. Production rose in all product categories during 1992-93 as producers responded to increased demand for their products, in particular from the automotive industry for use in exhaust systems and air-bag inflators. As a result, capacity utilization rose for most stainless products although it was generally somewhat lower than that in the carbon segment. The low level of capacity utilization for stainless wire rod has been attributed by the domestic industry to the increase in imports of this product (table E-2). U.S. producers filed antidumping petitions against imports of stainless wire rod from Brazil, France, and India in February 1993 (appendix F). Producers also filed antidumping petitions against welded stainless steel pipe from Malaysia in April 1993 and against stainless steel bar from Brazil, India, Italy, Japan, and Spain in February 1994.

Labor Conditions, Compensation, and Productivity

Members of the United Steelworkers of America (USWA) ratified labor agreements at several major integrated steel producing companies in 1993.[41] The agreements, which represent a breakthrough in labor relations by creating a new cooperative partnership between management and labor, all meet the "New Directions Bargaining Program" 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.[42] Industry sources have attributed the changed approach to labor-management relations to increased global competition (and the resultant need to improve productivity and profitability), the movement to improve product quality, and the USWA's desire for more input in the workplace.[43] The USWA contracts also call for

[39] Steel converters purchase steel mill products for conversion into other steel mill products.

[40] Derived from data submitted in response to USITC questionnaires.

[41] Companies ratifying contracts include Acme Steel, Bethlehem Steel, Inland Steel, LTV Steel, National Steel, North Star Steel, Republic Steel, and U.S. Steel.

[42] United Steelworkers of America, *Steelabor*, May/June 1993 and Sept./Oct. 1993.

[43] "Sharing Managerial Power with the Worker," *New Steel*, Feb. 1994.

Bethlehem, LTV, National, Inland, and U.S. Steel to join the union in conducting a Steel Industry Strategic Study. The purpose of the study is to develop strategies outside of the collective bargaining process for dealing with long-term trends in the industry.[44]

Total production workers employed by the steel industry declined by 4 percent during 1992-93 to 181,700 workers (table 12). Nominal hourly compensation for workers in the industry rose by 8 percent during that period.[45] In 1993, steel industry workers received $16.39 per hour, about 1.5 times the level of total compensation per annum of manufacturing workers as a whole. Steelworkers' nominal hourly earnings declined by 3 percent from 1992 to 1993, whereas nominal hourly earnings paid to workers in manufacturing industries in general rose by 2 percent during the period. The decline in steelworkers' nominal hourly earnings in 1993 was more than off-set by growth in other payments to workers, which caused the rise in nominal hourly compensation from 1992 to 1993.

As the industry has downsized and invested in new capital equipment, significant improvements have been made in worker productivity, as measured in output per employee hour. Steel industry productivity rose by 92 percent from 1982 to 1992 (compared with 32 percent for all manufacturing).

Capital Expenditures

Firms surveyed itemized their capital investments for 1992-93 for each product facility, providing data on capital expenditures for environmental control purposes, and total capital expenditures and reasons for those expenditures. The principal reasons given for investment were for facility maintenance and replacement, improvements in operating efficiency, improvements in product quality and service in response to customer demand, government regulation, and increasing capacity (tables G-1 and G-2). Responses were grouped by product type (i.e., carbon and certain alloy steel and stainless and alloy tool steel) and by producer type (i.e., integrated, minimill, and specialty) as discussed below.

Carbon and Certain Alloy Steel

Carbon steel producers reported capital expenditures of $2.3 billion in 1993, 9 percent lower than 1992 reported capital expenditures of $2.5 billion (table 13). Environmental expenditures accounted for 11 percent and 10 percent of total capital expenditures in 1992 and 1993, respectively.

Continuous strand-casting facilities accounted for the largest portion of total capital expenditures—14 percent in 1993, up 8 percent from capital expenditures made in 1992 for continuous casting. This reflects ongoing conversion to this method of producing semifinished steel forms, which has resulted in major improvements in costs and efficiency over the ingot-teeming method of producing semifinished steel. Although electric arc furnace steelmakers are predominantly scrap-based, improvements in steelmaking inputs (direct reduced iron, hot briquetted iron, and iron carbide, for example) or improved scrap sorting and chemistry control have enabled these steelmakers to broaden their product mix. As these steelmakers expand into flat-rolled products, they are studying ways to further reduce slab conversion costs. Concepts under review include thin slab casting (the slab measures 2 to 4 inches thick compared with a conventional 8 to 10-inch thick slab), or compact strip casting (strip is cast directly, bypassing slab casting and hot rolling reduction processes). Also under study are soft-rolling mills (slabs are reduced while their centers are still hot), and hot-rolling reversing mills (Steckel mills). The capital investment required and minimum efficient scale are significantly less than for an integrated steelmaking facility.[46] Investment in ironmaking facilities (accounting for 13 percent of total capital expenditures in 1993, up 79 percent over similar expenditures in 1992) reflected facility improvements; capital expenditures for cokemaking facilities (9 percent of total capital expenditures, down 38 percent from the 1992 level) represents the industry's continuing effort to modernize and to meet emission regulations. Investments in sheet and strip mills, including hot-rolled, cold-rolled, and coating operations, accounted for 20 percent of expenditures in 1993, reflecting facility upgrades and improvement in operating efficiency.

There were also significant increases in levels of spending to upgrade bar and rod mills. These investments in existing mills allow them to produce more technically demanding products with closer dimensional tolerances, tighter chemistry and metallurgical quality, and better surface finish. Such improvements might allow the substitution of hot-rolled bars for cold-finished bars, and allow rod producers to expand further into cold-heading (fasteners) and automotive applications, for example. Several companies also are adding wire rod rolling mills onto their existing bar mills (Inland Steel Bar Co. and USS/Kobe, for example). These additions are ascribed to improvements in rod quality and rod production efficiency that have allowed this segment to expand into markets that have traditionally consumed bars. (See related discussion in "Financial Conditions.")

[44] Ibid.

[45] For further information, see definition of compensation in footnote 3 of table 12.

[46] George J. McManus, "Scaling Down Slab Conversion Costs," *Iron Age*, Jan. 1993, pp. 12-14.

Table 12
Employment: Average annual employment of the steel industry, and productivity, nominal earnings, and nominal compensation for workers in steel and all manufacturing industries, 1992 and 1993

Year	Number of workers		Productivity index[1]		Nominal earnings[2]		Nominal compensation[3]	
	Total	Production	Steel	Manufacturing	Steel	Manufacturing	Steel[4]	Manufacturing
					Dollars per hour			
1992	[5]250,100	[5]188,700	191.9	131.9	[5]16.87	[5]10.96	29.57	[5]20.40
1993	238,300	181,700	([6])	[7]135.7	16.39	[7]11.20	31.89	20.96

[1] 1982=100.
[2] Including overtime earnings.
[3] Compensation, as defined in the national income and products account includes both direct and indirect payments to workers. Direct payments include payment for time worked (e.g., wages), payment for time not worked (e.g., vacation and holiday pay), bonuses, and other incentive or special pay. Indirect payments include employer contributions to insurance programs and contractual and private benefit plans.
[4] Data provided by American Iron and Steel Institute.
[5] Revised.
[6] Not available.
[7] Estimated on the basis of data provided in Bureau of Labor Statistics, *Employment and Earnings*, various issues and Bureau of Labor Statistics Office of Productivity and Technology.

Source: Compiled from official statistics of the U.S. Department of Labor, Bureau of Labor Statistics, except as noted.

Table 13
Carbon and certain alloy steel: U.S. producers' and converters' capital expenditures,[1] 1992 and 1993

Item	1992		1993		Percentage change	
	Environmental	Total	Environmental	Total	Environmental	Total
	Thousand dollars					
Cokemaking facilities	107,273	325,928	92,774	203,286	(13)	(38)
Ironmaking facilities	25,376	169,080	25,335	303,542	(2)	79
Raw steelmaking facilities:						
Basic oxygen process	50,405	91,057	34,838	70,890	(31)	(22)
Electric furnace	41,895	138,802	23,928	129,673	(43)	(7)
Continuous casting	5,305	304,609	1,879	330,256	(65)	8
Secondary steelmaking facilities[3]	(4)	1,717	(4)	9,560	(4)	457
Flat-rolled products:						
Plate mills	1,064	26,473	(4)	42,537	(4)	61
Sheet and strip:						
Hot strip mills	(4)	235,846	7,053	186,287	(4)	(21)
Cold-rolled sheet mills	10,141	164,450	3,300	183,882	(67)	12
Galvanizing facilities	5,810	203,166	2,005	43,247	(65)	(79)
Other coating facilities	2,404	57,466	1,359	38,817	(43)	(32)
Bars, shapes, and light structural mills:						
Hot-finished	64	72,703	(4)	166,724	(4)	129
Cold-finished	712	2,977	(4)	13,661	(4)	359
Medium and heavy structural mills[5]	(4)	26,167	(4)	(4)	(4)	(4)
Rail mills	0	4,079	0	(4)	0	(4)
Wire rod mills	(4)	6,436	(4)	18,520	(4)	188
Wire drawing machines	2,793	22,103	1,133	24,159	(59)	9
Wire products	854	27,712	1,808	34,846	112	26
Pipes and tubes:						
Seamless pipe mills	1,022	35,266	502	14,651	(51)	(58)
Welded pipe mills	4,245	38,707	1,946	49,301	(54)	27
Other[6]	22,405	581,193	33,994	197,265	46	(66)
Total	287,281	2,535,937	235,992	2,297,658	(18)	(9)

[1] Includes expenditures for the specific type of facility as well as related facilities. Also includes expenditures for plant and equipment, land and land improvement, occupational safety and health, and environmental control.

[2] Less than 0.5 percent.

[3] Includes ladle treatment (heat balance, alloy addition, degassing, decarburization, etc.) and other secondary refining processes (vacuum arc remelt, electroslag remelting, etc.).

[4] Not shown.

[5] Structural shapes with a cross-section exceeding 3 inches.

[6] Includes expenditures that companies could not allocate to product groups.

Note.—Because of rounding, figures may not add to totals shown.

Source: Compiled from data submitted in response to USITC questionnaires.

Despite the lower level of capital expenditures in 1993 compared with 1992, the U.S. steel industry continues to modernize, as reflected in questionnaire responses that list most frequently facility maintenance and replacement and operating efficiency improvements among reasons for capital expenditures. Investments to improve quality and service, to respond to Government regulation, and to increase capacity, although considered important, were more secondary objectives according to survey results.

Lower levels of capital expenditures overall can be attributed in part to an emerging segment of the carbon steel industry devoted to finishing hot-rolled steel mill flat products. The flat-rolled segment of the steel industry has traditionally relied on outside processors to convert large coils into exact forms and quantities needed by customers; new independent pickling, cold-rolling, and coating processors perform with greater flexibility services that have traditionally been integral parts of basic steelmaking.[47]

[47] George J. McManus, "Processors Take on Pickling and Cold-Reducing, Too," *New Steel*, Mar. 1994, pp. 18-22.

Stainless and Alloy Tool Steel

Specialty steel producers reported an increase of 5 percent to $140 million in total capital expenditures between 1992 and 1993 (table 14). Expenditures for environmental control declined 51 percent to $5 million during the same period although such investments are much less than for the industry segment producing carbon steels because stainless producers do not operate cokemaking and ironmaking facilities.

Investment made for flat-rolled products (plate, hot- and cold-rolled sheet and strip) accounted for 28 percent of total capital expenditures in 1993. Capital expenditures on mills that cold-roll sheet accounted for approximately 89 percent of flat-rolled product investments. Overall, investments focused on facility maintenance and replacement and on improvements in operating efficiency; producers reported that capacity increases, Government regulation, and improvements in product quality and service were secondary objectives.

Integrated Producers

Capital expenditures by the integrated producers accounted for 56 percent ($1.3 billion) of all capital expenditures reported to the Commission by steel producers in 1993.[48] Expenditures in 1993 were 19 percent lower than in 1992. Investments were concentrated in cokemaking (10 percent) and ironmaking (14 percent), in continuous casting (16 percent), and in sheet and strip mills (18 percent) in 1993. Excepting investment in ironmaking facilities, capital expenditures declined between 1992 and 1993 reflecting a winding down of expansion projects begun in previous years (e.g., expansion of galvanizing capacity) and the lower levels of capital expenditures needed to upgrade existing units.[49] Investment in

[48] Derived from data submitted in response to USITC questionnaires.

[49] George W. Hess, "Big Steel is Still Spending More than 1 Billion a Year," *Iron Age*, Sept. 1993, p. 39.

Table 14
Stainless and alloy tool steel: U.S. producers' and converters' capital expenditures,[1] 1992 and 1993

Item	1992		1993		Percentage change	
	Environmental	Total	Environmental	Total	Environmental	Total
	Thousand dollars					
Raw steelmaking facilities:						
Electric furnace		2,105	14,344	1,756	8,329	(17)
(42)						
Continuous casting	(2)	19,922	(2)	(2)	(2)	(2)
Secondary steelmaking facilities[3]	(2)	832	0	(2)	(2)	(2)
Flat-rolled products:						
Plate mills	(2)	2,132	(2)	2,220	(2)	4
Sheet and strip:						
Hot strip mills	(2)	(2)	(2)	2,261	(2)	(2)
Cold-rolled sheet mills	611	12,338	162	34,726	(82)	147
Bars and shapes:						
Hot-finished	(2)	389	(2)	(2)	(2)	(2)
Cold-finished	(2)	834	(2)	1,024	(2)	23
Wire rod mills	0	(2)	(2)	(2)	(2)	(2)
Wire drawing machines	(2)	1,488	(2)	(2)	(2)	(2)
Pipes and tubes:						
Seamless pipe mills	0	(2)	0	(2)	0	(2)
Welded pipe mills	2,382	5,357	(2)	7,243	(2)	35
Other[4]	2,984	71,013	1,507	76,145	(49)	7
Total	10,141	132,784	4,980	139,762	(51)	5

[1] Includes expenditures for the specific type of facility as well as related facilities. Also includes expenditures for plant and equipment, land and land improvement, occupational safety and health, and environmental control.

[2] Not shown.

[3] Includes ladle treatment (heat balance, alloy addition, degassing, decarburization, etc.) and other secondary refining processes (vacuum arc remelt, electroslag remelting, etc.).

[4] Includes expenditures that companies could not allocate to product groups.

Note.—Because of rounding, figures may not add to totals shown.

Source: Compiled from data submitted in response to USITC questionnaires.

ironmaking facilities increased nearly 80 percent between 1992 and 1993, according to the Commission's survey, reflecting in part the installation of pulverized coal injection equipment (which allows the use of lower quality coal and lowers coke consumption) and the purchase by LTV Steel Company of a Corex-based ironmaking facility.[50] Elsewhere, Geneva Steel has applied to be the site of the commercialization phase of the AISI-DOE direct-ironmaking project.[51] Significant investments were also made in upgrading steelmaking furnaces, secondary steelmaking facilities, and plate mills. The most often-cited reason for investment was facility maintenance and replacement, followed by improvement in operating efficiency, and improvements in product quality and service.

Minimill Steel Producers

Capital expenditures by the "minimill" industry segment accounted for 30 percent ($680 million) of all capital expenditures by steel producers in 1993, according to survey results.[52] These expenditures fell 6 percent between 1992 and 1993. Electric furnace investment accounted for more than 26 percent of expenditures in 1993; reportedly, much of this investment is in obtaining greater operational efficiency through utilization of direct-current electric furnaces, scrap preheating and continuous charging, other energy-conserving measures, and the utilization of scrap substitutes.[53] Modernization of bar mills and wire rod mills were also leading investment areas, as noted earlier. Facility maintenance and replacement and improvements in operating efficiency were the most commonly cited reasons for capital investments in this segment of the steel industry.

Specialty Steel Producers

Capital expenditures by the specialty steel producers (those who make primarily stainless and alloy tool steel) accounted for 6 percent ($130 million) of all capital expenditures by steel producers in 1993.[54] Investments in steelmaking facilities and in flat-rolling mills (plate, sheet, and strip) accounted for 29 percent of total capital expenditures by this segment of the steel industry in 1993 according to survey results; investment in cold-rolling mills, focused on improving gauge control, accounted for the bulk of flat-rolled capital expenditures. Facility maintenance and replacement and improvements in operating efficiency were the reasons for investment that the specialty steel producers cited most often.

Environmental Control and Related Expenditures

Restrictions under the 1990 Clean Air Act Amendments (CAAA) continued to dominate U.S. steelmakers' environmental concerns in 1993. As regulations on cokemaking become increasingly more restrictive, raising the costs of producing and purchasing coke, integrated steelmakers must decide whether to invest in more environmental control systems, purchase coke, or switch to alternative feedstocks.[55] Requirements under the CAAA reportedly have already contributed to several integrated steelmakers exiting the cokemaking business, including Inland Steel's decision to idle their ovens in 1993, a year earlier than had been planned.

U.S. steelmakers' expenditures on environmental controls continued to account for a significant portion of total capital expenditures in 1993. Environmental capital expenditures by carbon and certain alloy steel producers fell by 17 percent from 1992 to 1993 (table 15), but accounted for about 10-11 percent of total capital expenditures in each year. Spending on air quality control, mostly spurred by the CAAA, dominated total environmental capital expenditures, accounting for 72 percent in 1993 (63 percent in 1992), followed by water quality and solid waste control. Environmental capital expenditures by carbon and certain alloy steelmakers in 1993 were directed primarily at cokemaking facilities.

Capital expenditures on environmental controls by stainless and alloy tool steel producers also decreased from 1992 to 1993, falling by 51 percent (table 16). Expenditures on environmental control were relatively low compared with similar expenditures by carbon and certain alloy steelmakers, accounting for 7.6 and 3.6 percent of total capital expenditures in 1992 and 1993,

[50] George J. McManus, "The Direct Approach to Making Iron," *Iron Age*, Sept. 1993, p. 56.

[51] This project has as its goal the replacement of current ironmaking process technology, coke ovens and blast furnaces, by a direct process of iron smelting. The project's sponsors are the U.S. Department of Energy (DOE), under the Clean Coal Technology Act, and the American Iron and Steel Institute (AISI). See, USITC, *Steel: Semiannual Monitoring Report*, USITC Publication 2655, p. 27.

[52] Derived from data submitted in response to USITC questionnaires.

[53] For a listing of capital investment projects by minimill operators, see George W. Hess, "High-voltage Spending by the Electric Steelmakers," *Iron Age*, Sept. 1993, pp. 30-37.

[54] Derived from data submitted in response to USITC questionnaires. The sum of the shares of capital expenditures by integrated, minimill, and specialty producers equals approximately 92 percent of total capital expenditures reported in response to the Commission's questionnaire. The remainder is accounted for by steel processors that responded to the questionnaire.

[55] A more detailed discussion of these issues can be found in USITC, *Metallurgical Coke: Baseline Analysis of the U.S. Industry and Imports* (Investigation No. 332-342), USITC publication 2745, Mar. 1994.

Table 15
Carbon and certain alloy steel: U.S. producers' expenditures on environmental control, 1992 and 1993

Item	1992	1993	Percent change
	— *Thousand dollars* —		
Capital expenditures:			
Air	182,108	169,980	(7)
Water	73,890	45,679	(38)
Solid waste	31,274	20,333	(35)
Subtotal	287,280	235,992	(18)
Operating expenditures:			
Air	324,814	248,276	(24)
Water	199,519	154,083	(23)
Solid waste	110,420	93,955	(15)
Subtotal	634,753	496,314	(22)
Environmental fines	12,141	8,872	(27)
Environmental litigation costs	8,131	7,691	(5)

Note.—Because of rounding, figures may not add to totals shown.

Source: Compiled from data submitted in response to USITC questionnaires.

Table 16
Stainless and alloy tool steel: U.S. producers' expenditures on environmental control, 1992 and 1993

Item	1992	1993	Percent change
	— *Thousand dollars* —		
Capital expenditures:			
Air	2,385	3,165	33
Water	5,064	1,457	(71)
Solid waste	2,692	358	(87)
Subtotal	10,141	4,980	(51)
Operating expenditures:			
Air	16,162	17,429	8
Water	23,275	23,543	1
Solid waste	17,098	19,080	12
Subtotal	56,535	60,052	6
Environmental fines	367	332	(10)
Environmental litigation costs	4,080	363	(91)

Note.—Because of rounding, figures may not add to totals shown.

Source: Compiled from data submitted in response to USITC questionnaires.

respectively. Spending on air quality control dominated capital spending by specialty steelmakers and reflected the only year-to-year increase in environmental outlays, accounting for 64 percent of total capital expenditures in 1993 compared with 24 percent in 1992. Spending on air quality apparently outstripped spending on water quality for the first time, reflecting spending on electric furnace facilities.[56]

[56] USITC staff note that trends for specialty steelmakers may be somewhat distorted because a major producer did not respond to this section of the Commission's questionnaire.

U.S. steelmakers' expenditures for operating all categories of environmental equipment decreased from 1992 to 1993, falling by 22 percent (to $496 million) for carbon and certain alloy steel producers but increasing by 6 percent (to $60 million) for specialty steel producers. Operating expenditures for air quality control dominated spending by carbon and certain alloy steel producers in 1993 (50 percent of total), whereas specialty steelmakers focused on water quality (39 percent of total). Operating expenditures for specialty steelmakers accounted for 92 percent of total

environmental expenditures, compared to only 68 percent for carbon and certain alloy steelmakers, suggesting that the latter are continuing to make commitments to install new environmental control equipment.

Carbon and certain alloy steel producers reported 244 environmental violations in 1993, resulting in $8.9 million in fines. Fines assessed for air pollution accounted for 41 percent of the total in 1993, 40 percent for water, and 19 percent for solid waste. Carbon and certain alloy steelmakers' expenditures on environmental litigation costs, as reported in the Commission's survey, fell slightly by 5 percent to $7.7 million in 1993.

Stainless and alloy tool steelmakers reported 4 environmental violations in 1993, resulting in $332,000 in fines. Fines assessed for air pollution accounted for 64 percent of the total in 1993, 25 percent for water, and 11 percent for solid waste. Specialty steelmakers' expenditures on environmental litigation costs fell by 93 percent to $363,000 in 1993.

Research and Development

As reported in the Commission's survey, steel industry expenditures for research and development (R&D) represented 0.31 percent of net sales for the industry as a whole, somewhat lower than for other metals industries. However, R&D expenditures differ between the two industry segments examined in this report. Expenditures for R&D by producers of carbon and certain alloy steel declined by about 6 percent, to $104 million between 1992 and 1993 (table 17), and represented 0.24 percent of net sales in 1993. Within the industry segment producing carbon and certain alloy steel integrated producers spent more, both overall and in relation to their net sales, than did their minimill counterparts. Expenditures for R&D by producers of specialty steel (stainless steel and alloy tool steel) declined 3 percent to $45 million between 1992 and 1993 (table 17), although the specialty steel segment's R&D expenditures represented 0.99 percent of new sales. This higher ratio represents the segment's greater profitability and generally stronger financial condition when compared to the industry segment producing carbon and certain alloy steel.

In the carbon steel segment of the steel industry, R&D expenditures for the production of cold-rolled and coated sheet accounted for nearly 39 percent ($40 million) of total R&D expenditures in 1993 (table 17). Investments focus as well on improvements in ironmaking ($8 million) and steelmaking ($14 million) technology, and continuous casting ($8 million). Improvements in product quality (including developing new products) and operating efficiency, and reducing energy consumption or pollution levels were reasons cited by survey respondents most often (tables H-1 and H-2). The steel industry continues to utilize cooperative research programs to spread the cost of R&D and to disseminate more widely the information gained.[57]

Financial Conditions

Gross profits generated by the steel industry significantly increased from 1992 to 1993, and the industry as a whole recorded operating profits before other expenses and taxes of $2.7 billion in 1993 (table 18). Data reported in the Commission's survey indicate that all industry segments reported positive operating profits and net income before taxes in 1993 (tables 19 and 20). This position contrasts with industry financial results reported in 1992, and profitability is generally attributed to higher operating levels and increased shipments and prices. An examination of financial performance on a product basis reveals that the greatest losses occurred in the carbon steel segment among semifinished forms, plate, and certain types of tubular goods. The highest returns within the carbon steel segment were among long products (including bar and rod), wire, and mechanical pipe and tube; certain coated flat-rolled products (sheet and strip) also were profitable on a product-line basis (table 21). Products within the stainless and alloy tool steel segment were generally profitable on an operating income basis (2 to 11 percent), except rod (minus 1.6 percent). Producers of carbon flat-rolled steel, carbon bar and rod, and stainless steel products, allege that imports of dumped and subsidized products adversely affected their financial performance during the 1991-92 period and that the effects of dumped and subsidized imports carried over into 1993.[58] However, the trade cases filed in 1992 and 1993 impacted imports because the cases covered large percentages of imports from main trading partners in major product groups, and lower import levels (because of affirmative antidumping findings in certain cases) facilitated some of the price increases.

The continuing U.S. economic recovery in 1993 contributed to upturns in shipments, capacity utilization, and operating profits from 1992 to 1993. Growth in steel demand occurred in nearly all major

[57] For more detailed information on these cooperative research programs and on the introduction of newer technologies and techniques, see USITC, *Steel Semiannual Monitoring Report*, USITC Publication 2655, pp. 25-28.

[58] For example, information submitted in connection with USITC, *Certain Flat-Rolled Carbon Steel Products from Argentina, Austria, Belgium, Brazil, France, Germany, Italy, Japan, the Republic of Korea, Mexico, the Netherlands, New Zealand, Poland, Romania, Spain, Sweden, and the United Kingdom* (Investigation Nos. 701-TA-319-332, 334, 336-342, 344, 347-353 and 731-TA-573-579, 581-592, 594-597, 599-609, and 612-619), USITC Publication 2664, August 1993; USITC, *Stainless Steel Wire rod from India* (Investigation No. 731-TA-638), USITC Publication 2704, November 1993; and, USITC, *Certain Steel Wire Rod from Brazil and Japan* (Investigation Nos. 731-TA-646 and 648), USITC Publication 2761, March 1994.

Table 17
Research and development expenditures, by processes and products, 1992 and 1993

Item	1992		1993		Percentage change	
	Carbon and certain alloy steel	Stainless and alloy tool steel	Carbon and certain alloy steel	Stainless and alloy tool steel	Carbon and certain alloy steel	Stainless and alloy tool steel
	1,000 dollars					
Cokemaking facilities	4,097	(1)	3,478	(1)	(15)	(2)
Ironmaking facilities	5,930	(1)	4,400	(1)	(26)	(2)
Raw steelmaking facilities:						
Basic oxygen process & other	8,226	(1)	5,753	(1)	(30)	(2)
Electric furnace	7,767	510	8,194	(4)	6	(2)
Continuous casting	6,449	0	6,978	(4)	8	(2)
Secondary steelmaking facilities[3]	362	(4)	(4)	(4)	(2)	(2)
Flat-rolled products:						
Plate mills	5,599	(4)	6,549	(4)	17	(2)
Sheet and strip:						
Hot strip mills	7,153	(4)	4,870	(4)	(32)	(2)
Cold-rolled sheet mills	17,946	(4)	14,978	(4)	(16)	(2)
Galvanizing facilities	8,580	(1)	14,037	(1)	64	(2)
Other coating facilities	16,417	(1)	11,210	(1)	(32)	(2)
Bars, shapes, and light structural mills:						
Hot-finished	2,766	(4)	(4)	(4)	(2)	(2)
Cold-finished	(4)	(4)	(4)	(4)	(2)	(2)
Medium and heavy structural mills[5]	(4)	(1)	(4)	(1)	(2)	(2)
Rail mills	(4)	(1)	(4)	(1)	(2)	(2)
Wire rod mills	742	(4)	272	92	(63)	(2)
Wire drawing machines	339	(4)	(4)	(4)	(2)	(2)
Wire products	(4)	(1)	(4)	(4)	(2)	(2)
Pipes and tubes:						
Seamless pipe and tube mills	(4)	(4)	(4)	(4)	(2)	(2)
Welded pipe and tube mills	873	(4)	2,060	(4)	136	(2)
Other[6]	13,595	16,663	12,795	17,606	(6)	6
Total	111,499	46,533	104,327	45,183	(6)	(3)

[1] None reported.
[2] Not applicable.
[3] Includes ladle treatment (heat balance, alloy addition, degassing, decarburization, etc.) and other secondary refining processes (vacuum arc remelt, electroslag remelting, etc.).
[4] Not shown.
[5] Structural shapes with a cross-section exceeding 3 inches.
[6] Includes expenditures that could not be effectively allocated to product groups.

Source: Compiled from data submitted in response to USITC questionnaires.

Table 18
Financial experience of U.S. steel producers and converters,[1] 1992 and 1993

(1,000 dollars)

Item	Carbon and certain alloy steel		Stainless and alloy tool steel	
	1992	1993	1992	1993
Total net sales[2]:	39,440,189	43,234,544	4,159,107	4,542,744
Cost of goods sold (including intracompany and intercompany transfers):				
Raw materials	10,958,817	10,642,943	1,654,479	1,459,579
Direct labor	5,491,389	5,142,122	492,750	419,569
Other	12,679,728	11,495,676	1,376,128	1,170,604
Total cost of goods sold[3]	37,416,954	38,975,091	3,573,993	3,762,741
Gross profit or (loss)	2,023,235	4,259,452	585,114	780,003
General, selling, and administrative expenses	2,272,565	2,021,295	284,038	309,614
Operating income or (loss)	(249,330)	2,238,157	301,076	470,389
Other income or (expense):				
Net interest income or (expense)	(703,627)	(820,716)	(70,916)	(66,270)
All other income or (expense)[4]	(477,531)	441,834	(49,240)	(3,555)
Total other income or (expense)	(1,181,158)	(174,743)	(120,156)	(69,825)
Net income or (loss) before taxes	(1,494,466)	2,063,414	180,920	400,563
Depreciation and amortization	1,753,156	1,843,944	112,697	221,516

[1] Certain respondents included financial information on related products.
[2] Includes intracompany and intercompany transfers, less discounts, returns, and allowances.
[3] Including nonitemized figures
[4] Certain respondents reported extraordinary and nonrecurring expenses.

Note.—Because of rounding, figures may not add to totals shown.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 19
Financial experience of U.S. steel producers and converters,[1] 1992

(1,000 dollars)

Item	Integrated	Minimills	Specialty	Processors
Total net sales[2]	23,382,764	9,891,204	4,318,344	6,006,984
Cost of goods sold (including intracompany and intercompany transfers):				
Raw materials	4,903,514	2,601,366	1,590,534	3,517,882
Direct labor	4,003,340	925,970	559,700	495,129
Other	8,426,214	3,030,671	1,551,154	1,047,817
Total cost of goods sold[3]	23,066,840	8,892,658	3,751,561	5,279,888
Gross profit or (loss)	315,924	998,546	566,783	727,096
General, selling, and administrative expenses	1,222,209	570,048	294,637	469,709
Operating income or (loss)	(906,285)	428,498	272,146	257,388
Other income or (expense):				
Net interest income or (expense)	(411,840)	(186,546)	(72,684)	(103,473)
All other income or (expense)[4]	(127,677)	(321,752)	(50,630)	(26,712)
Total other income or (expense)	(539,517)	(508,298)	(123,314)	(130,185)
Net income or (loss) before taxes	(1,445,802)	(136,860)	148,832	120,284
Depreciation and amortization	1,131,521	407,024	124,792	202,516

[1] Certain respondents included financial information on related products.
[2] Includes intracompany and intercompany transfers, less discounts, returns, and allowances.
[3] Including nonitemized figures.
[4] Certain respondents reported extraordinary and nonrecurring expenses.

Note.—Because of rounding, figures may not add to totals shown.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 20
Financial experience of U.S. steel producers and converters[1], 1993

(1,000 dollars)

Item	Integrated	Minimills	Specialty	Processors
Total net sales[2]:	24,810,736	12,309,798	4,644,018	6,012,737
Cost of goods sold (including intracompany and intercompany transfers):				
Raw materials	4,147,302	3,029,669	1,297,616	3,627,936
Direct labor	3,689,203	1,010,972	403,898	457,618
Other	7,043,647	3,409,800	1,178,970	1,033,864
Total cost of goods sold[3]	23,383,214	10,907,414	3,877,694	4,569,511
Gross profit or (loss)	1,27,5228	1,402,384	766,324	1,443,226
General, selling, and administrative expenses	991,284	595,186	312,477	431,962
Operating income or (loss)	436,238	807,198	453,847	1,011,263
Other income or (expense):				
Net interest income or (expense)	(544,901)	(189,808)	(67,929)	(89,348)
All other income or (expense)[4]	616,276	(156,572)	15,027	(36,451)
Total other income or (expense)	224,995	(295,566)	(52,902)	(121,095)
Net income or (loss) before taxes	661,233	511,632	400,945	890,168
Depreciation and amortization	1,223,977	528,224	134,204	179,056

[1] Certain respondents included financial information on related products.
[2] Includes intracompany and intercompany transfers, less discounts, returns, and allowances.
[3] Includes nonitemized figures.
[3] Certain respondents reported extraordinary and nonrecurring expenses.

Note.—Because of rounding, figures may not add to totals shown.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 21
Steel: Total net sales and net operating income or (loss) as a percentage of sales, by selected products, 1992 and 1993

Item	Total net sales[1]		Operating income or (loss) as a percent of sales	
	1992	1993	1992	1993
	Thousand dollars			
Carbon and certain alloy steel:				
Semifinished	847,422	971,355	(5.79)	(4.92)
Plates	2,115,442	2,128,709	(1.71)	(3.20)
Sheet and strip:				
Hot-rolled	6,270,979	7,369,802	(6.27)	(0.34)
Cold-rolled	6,007,602	6,687,069	(4.64)	(0.80)
Galvanized	5,846,214	6,272,934	1.06	1.42
Other	3,549,335	3,641,878	3.31	3.31
Subtotal, sheet and strip	21,674,130	27,066,747	(2.27)	0.64
Bars:				
Hot-finished	4,130,485	4,968,364	1.84	4.68
Cold-finished	533,482	839,808	2.17	5.93
Subtotal, bars	4,663,967	5,808,172	1.87	4.86
Wire rod	1,418,931	1,614,009	1.83	4.51
Wire	1,025,094	1,168,309	3.06	6.34
Wire products	756,994	613,768	2.69	3.58
Structural shapes and units	2,235,890	2,058,552	5.20	2.26
Rails and related products	364,897	407,478	2.81	(1.68)
Pipe and tube:				
Line	803,555	566,490	1.26	(4.94)
Mechanical	950,250	849,867	6.44	12.69
Oil country tubular goods	437,528	703,531	(10.17)	(5.68)
Structural	271,269	227,800	8.36	5.51
Pressure	120,660	167,160	(0.20)	(1.17)
Other	1,057,028	1,223,522	6.29	6.42
Subtotal, pipe and tube	3,640,290	3,738,370	3.18	3.45
Subtotal, carbon and certain alloy steel	38,743,057	42,475,405	(0.44)	1.86
Stainless and alloy tool steel:				
Semifinished	209,869	345,834	(1.05)	1.96
Plates	443,995	489,043	10.92	8.77
Sheet and strip	2,382,693	2,554,384	10.69	10.65
Bars and shapes	634,946	696,167	(0.64)	4.36
Wire rod	77,040	71,783	(18.04)	(1.62)
Wire	151,880	160,754	5.05	10.85
Pipe and tube	235,528	228,097	2.29	4.39
Subtotal, stainless and alloy tool steel	4,135,951	4,546,062	7.16	8.32
Total	42,879,008	47,021,467	0.29	2.49

[1] Includes intracompany and intercompany transfers, less discounts, returns, and allowances.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

sectors (including automotive, machinery and industrial equipment, appliance, and construction), reflected by increases in shipments of between 5 and 16 percent. In addition, during 1993 there was some hedge buying in anticipation of rising prices and a possible strike at any one of five major integrated mills, likely coupled with rebuilding of inventories; inventory levels had slipped to relatively low levels during 1991-92 in response to declining prices and shortened lead-times, according to industry executives.

The apparent strength of the recovery of the U.S. steel industry also is reflected by strong increases in purchases of imported semifinished steel forms (slab and billet) by primary producers, purchase allocation programs, and significant increases in delivery lead times.[59] Price increases, on the order of $50 to $100 per ton (5 to 25 percent), announced by producers of steel mill products contributed to increased operating profits. However, these price increases were offset to some extent by rising costs of scrap and other inputs, and certain electric furnace steelmakers specifically cited rising scrap costs as the reason for increasing prices.[60]

Other factors influencing corporate financial performance are reported in the categories of "other income or expense" and include the added obligations stemming from the recognition of certain expenses, liabilities, and assets. The change of largest magnitude has been the recognition of liabilities for company retirees, other than pension costs, under Statement of Financial Accounting Standards (SFAS) 106.[61] For instance, National Steel incurred a charge of $14.8 million for retirement benefits.[62] Several other companies implemented SFAS 106 during 1993. In addition to recognizing certain postretirement costs, several steelmakers reported plant closure and special restructuring expenses that are also included in the categories of "extraordinary expenses," (i.e., below operating income). Sharon Steel Inc. (which had operated as debtor-in-possession in Chapter XI since November 1992) closed during 1993 after selling its inventory to pay back-wages to its workers. A U.S. bankruptcy judge rejected Sharon Steel's business plan, which would have permitted executives to reopen the Farrell, PA, steel mill, reportedly terming it "too optimistic." The Pension Benefit Guaranty Corporation assumed its pension plans.[63] There reportedly was one announced tender offer for its melt shop, caster, and some related assets by an investor, but company management deemed the bid too low.[64]

Rising steel prices and profitability, continued streamlining of production, increased consumer demand and optimism, greater access to capital markets, and lower investment costs have encouraged acquisitions and expansion among steelmakers. There are reportedly eight new steel mills currently under consideration or under construction in the United States; if all these mills became operational, production capacity would increase by approximately 5 to 6 million tons per year (about 9 to 12 percent) for carbon steel flat-rolled products (sheet and strip) and by approximately 1 to 2 million tons (4 to 8 percent) for carbon steel bar and rod. Low capital investment requirements (about $350 per annual ton) has enabled planned expansion of the flat-rolled steel (sheet and strip) segment of the industry. These mills are all reportedly based on electric arc furnace steelmaking coupled with thin-slab or compact strip casting. These projects include a joint venture between Dofasco and CoSteel (Canadian companies) currently under construction in Gallatin, KY; a mill by Ipsco (Canada) at a location still-to-be named;[65] a joint venture between Nucor Corp. and Oregon Steel, currently seeking a location in the Pacific Northwest or California; a mill to be constructed by Steel Dynamics (formed by former-Nucor executives) in the Midwest; and Nucor's proposed additional mills, one on the East Coast and another in the upper-Midwest. These proposed increases in steelmaking and flat-rolled capacity are in addition to about 2 million tons of new corrosion-resistant coating capacity installed by four integrated steelmakers during 1992-93 to serve the needs of automobile producers. These companies include Bethlehem Steel (three facilities), Nucor, USX-Kobe (Protec), and Wheeling Pitt-Nisshin.[66]

CoSteel (Canada) announced it was in the initial planning stages (to be completed by September 1994) for a 500,000 to 1 million ton-per-year bar and rod mill to be located in Kentucky to serve the automotive markets. North Star Steel has indicated that it soon may decide whether to construct a mill in Arizona to serve rod markets in the Mountain States. Oregon

[59] USITC, *Certain Flat-Rolled Carbon Steel Products*, p. I-155 and USITC, *Certain Steel Wire Rod*, pp. II-15 and II-52.

[60] USITC, *Certain Steel Wire Rod*, p. II-49.

[61] For a discussion of the impact on company balance sheets and income statements, and effect on credit, stock, and bond ratings see USITC, *Steel: Semiannual Monitoring Report*, USITC Publication 2655, pp. 30-31.

[62] Company annual report.

[63] The principal reasons for the bankruptcy filing were the company's underfunded pension plan obligations, and worker and retiree health insurance costs.

[64] "Judge Keeps Sharon Idle," *American Metal Market*, Apr. 27, 1993, p. 1.

[65] IPSCO apparently has not finalized its decision locating this proposed mill (valued at $360 million) in Iowa. The company reportedly is negotiating with legislative leaders in that state as well as in two other states.

[66] Some of this new coating capacity is the subject of joint ventures by U.S. and Japanese steelmakers. Also, DNN, a joint venture of National Steel (US), NKK (Japan), and Dofasco (Canada) started a 400,000 ton-per-year coating facility in Ontario, Canada during 1993 to service the U.S. and Canadian auto markets. Japan Steel Information Center, *Joint Ventures in the U.S. by Japanese Steel Makers*, June 1992. Also, *Iron and Steel Engineer*, Feb. 1993, p. 52.

Steel purchased CF&I (a producer of steel railroad rails, bar and rod, and tubular goods), assuming operational control during February 1993; Oregon Steel reportedly is to invest approximately $180 million to modernize equipment and production lines at CF&I. Inland Steel Bar Co. cobbled a wire rod mill onto its existing bar rolling line; this mill is scheduled to become operational during April 1994 and produce up to 50,000 tons of high-end cold-heading quality rod for automotive applications. Also supplementing its bar production, USS/Kobe (a joint venture between USX Corp. and Kobe Steel) is constructing a rod mill at a cost of about $70 million at its facility in Lorraine, OH; this new rod mill currently is scheduled to be operational during 1995.

Industry restructuring was also driven by a number of acquisitions and divestitures during 1993, often resulting in companies streamlining their product mixes. Armco apparently intends to concentrate on the production of stainless flat-rolled products. For example, in the carbon steel segment, Armco sold its Midwest facility to GS Technologies for $80 million. GS Technologies intends to operate the Kansas City, MO rod mill as GS Steel.[67] In April 1994, Armco sold its share in Armco Steel Co., L.P. (carbon flat-rolled production at Middletown and Ashland, OH, a joint venture with Kawasaki Steel (Japan)). Armco announced during 1993 that it intends to divest the Cytemp division (acquired from Cyclops Industries in 1992), and it substantially discontinued operations at its Baltimore, MD, stainless steel rod mill. Armco's joint venture with Acerinox (Spain), North American Stainless, began operating in 1993 and rolls stainless sheet and strip. Bethlehem Steel sold its Bar, Rod, and Wire Division (comprising the mills at Lackawanna and Johnstown, PA) to Veritas Capital Inc. in February 1994, and Bethlehem exited those product lines;[68] Bethlehem reportedly will not produce large structurals, following restructuring and modernization of its Bethlehem, PA, mill.

Other companies moved to broaden the range of products produced. In the stainless segment, Lukens purchased Washington Steel (a producer of stainless plate) and Allegheny Ludlum bought Athlone Industries (the Jessop Steel subsidiary produces stainless plate). Both transactions were reportedly undertaken to round out product lines. Birmingham Steel, a carbon steel producer, diversified its product mix beyond concrete reinforcing bar and mine roof bolts and expanded into more technologically demanding products through its purchase of American Steel and Wire (a premier U.S. producer of rod and wire for cold-heading applications). ■

[67] This sale included the grinding ball mill at the same facility and Armco's 50-percent partnership with Leggett and Platt, a large U.S. wire drawer.

[68] During 1993, Caribbean Ispat Limited (which produces rod and wire products in Trinidad and Tobago, Malaysia, and India) tried to purchase Bethlehem's Bar, Rod, and Wire division. The transaction failed because a labor accord could not be reached.

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

Structure

- 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 steel industry developments highlights major events in both the U.S. and foreign steel industries.
- The special focus section analyzes current conditions in the U.S. industry, including information on recent developments in steel consumption, trade, capacity, production, capital expenditures, environmental expenditures, spending on research and development, employment, and financial performance. Data on U.S. industry conditions, compiled primarily from questionnaires, are provided in tables 6 through 21. U.S. shipment and trade data, compiled from secondary sources, are provided in appendix E, tables E-1 through E-37, described below.
- Tables E-1 through E-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 E-6 through E-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 E-27 show data on the total value of carbon and specialty steel imports and exports on a product basis.
- Tables E-28 and E-29 show data on the unit values of selected imports and exports of carbon and specialty steel products.
- Tables E-30 and E-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 E-32 through E-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 1993, AISI reported imports of 19.5 million tons, which compares to the 20.4 million tons indicated in this report. The product categories most affected are structural shapes and units (which include fabricated structurals in this report) and wire and wire products (which include wire rope and wire strand).

The regional groupings in tables E-6 through E-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;

- EU12 (formerly the European Community) 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 E-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; 1,258 tons ($1,537,000) of February 1991 tool steel exports to Mexico, which were reclassified as alloy bar exports; and 19,920 tons ($3,443,000) of May 1993 hot-rolled carbon steel plate imports, which were reclassified as carbon steel semifinished imports.

The rails and related products category includes both new and used rails (see appendix D for complete definition). Of the 268,764 tons of rails and related products imported into the United States during 1993, 29 percent (or 77,272 tons) were used rails.

In tables E-28 and E-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

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 2,200o 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 *Harmonized Tariff Schedules of the United States* (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 *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 7225.10.0030, 7225.10.0060, 7226.10.1030, 7226.10.1060, 7226.10.5015, 7226.10.5020 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, 7304.41.3005, 7304.41.3015, 7304.41.3045, 7304.41.6005, 7304.41.6015, 7304.41.6045, 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
Statistical Tables on U.S. Shipments (of) and U.S. Trade in Steel Mill Products and Certain Fabricated Steel Products, 1990-93

Table E-1
Steel mill products:[1] U.S. producers' shipments, by products and grades of steel, 1990-93

(Short tons)

Item	1990	1991	1992	1993
All grades of steel:				
Semifinished	1,916,575	2,548,961	2,292,847	2,481,939
Plate	5,131,846	4,271,412	4,361,596	4,769,891
Sheet and strip	46,628,513	43,300,206	46,456,874	50,275,252
Bars & certain shapes[2]	14,726,831	12,840,512	13,435,487	14,305,414
Wire rod	4,325,740	4,365,595	4,486,926	4,875,336
Wire	917,950	865,092	880,710	792,182
Wire products	(3)	(3)	(3)	(3)
Structural shapes & units	6,092,821	5,675,786	5,716,306	5,808,514
Rails & related products	518,593	486,185	525,582	645,893
Pipe and tube	4,651,570	4,488,014	4,197,881	4,445,436
Total	84,910,439	78,841,763	82,354,209	88,399,857
Carbon & certain alloy[4] steel:				
Semifinished	1,873,588	2,469,217	2,226,029	2,436,843
Plate	5,016,698	4,174,312	4,266,415	4,664,022
Sheet and strip	45,577,983	42,254,291	45,325,716	49,104,314
Bars & certain shapes	14,531,409	12,654,917	13,236,284	14,100,686
Wire rod	4,291,153	4,331,673	4,457,404	4,850,148
Wire	894,750	841,602	856,252	767,983
Wire products	(3)	(3)	(3)	(3)
Structural shapes & units	6,092,821	5,675,786	5,716,306	5,808,514
Rails & related products	518,593	486,185	525,582	645,893
Pipe and tube	4,610,197	4,453,781	4,166,362	4,420,107
Total	83,407,192	77,341,764	80,776,350	86,798,510
Stainless & alloy tool steel:				
Stainless steel:				
Semifinished	42,987	79,744	66,818	45,096
Plate	115,148	97,100	95,181	105,869
Sheet and strip	1,050,530	1,045,915	1,131,158	1,170,938
Bars & certain shapes	137,717	134,405	135,293	137,184
Wire rod	34,587	33,922	29,522	25,188
Wire	23,200	23,490	24,458	24,199
Pipe and tube	41,373	34,233	31,519	25,329
Tool steel (all forms)	57,705	51,190	63,910	67,544
Total stainless and tool	1,503,247	1,499,999	1,577,859	1,601,347

[1] Shipment data compiled by AISI 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 & Steel Institute (AISI).

Table E-2
Steel mill products and certain fabricated steel products: U.S. imports, by products and grades of steel, 1990-93

(Short tons)

Item	1990	1991	1992	1993
All grades of steel:				
Semifinished	2,362,820	2,045,572	2,344,321	4,972,667
Plate	933,290	792,605	893,403	731,274
Sheet and strip	7,697,057	7,107,749	8,793,326	7,568,536
Bars & certain shapes[1]	1,119,085	1,041,496	1,152,617	1,514,351
Wire rod	979,241	846,923	1,146,420	1,397,196
Wire	432,336	391,804	430,981	528,192
Wire products	660,325	511,839	586,916	614,823
Structural shapes & units	1,020,593	604,361	589,613	742,074
Rails & related products	349,555	303,596	299,418	268,764
Pipe and tube	2,589,409	2,735,372	1,543,490	2,056,092
Total	18,143,711	16,381,316	17,780,504	20,393,968
Carbon & certain alloy[2] steel:				
Semifinished	2,301,998	1,996,610	2,307,144	4,879,125
Plate	922,826	779,002	878,172	692,291
Sheet and strip	7,524,025	6,930,919	8,567,140	7,208,481
Bars & certain shapes	1,035,255	943,845	1,057,195	1,393,135
Wire rod	956,113	821,026	1,106,805	1,356,489
Wire	414,008	374,750	411,892	506,223
Wire products	660,325	511,839	586,916	614,823
Structural shapes & units	1,020,593	604,361	589,613	742,074
Rails & related products	349,555	303,596	299,418	268,764
Pipe and tube	2,542,189	2,687,154	1,500,877	2,012,557
Total	17,726,887	15,953,102	17,305,171	19,673,962
Stainless & alloy tool steel:				
Stainless steel:				
Semifinished	60,822	48,962	37,177	113,462
Plate	10,464	13,602	15,231	19,063
Sheet and strip	173,033	176,830	226,186	360,054
Bars & certain shapes	44,526	52,493	57,499	70,067
Wire rod	23,128	25,897	39,616	40,707
Wire	18,328	17,054	19,089	21,969
Pipe and tube	47,220	48,218	42,612	43,535
Tool steel (all forms)	39,304	45,158	37,923	51,150
Total stainless and tool	416,824	428,214	475,333	720,007

[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): 17,33 short tons, 1990; 15,748,077 short tons, 1991; 17,062,421 short tons, 1992; 19,981,671 short tons, 1993.

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

Table E-3
Steel mill products and certain fabricated steel products: U.S. exports of domestic merchandise, by products and grades of steel, 1990-93

(Short tons)

Item	1990	1991	1992	1993
All grades of steel:				
Semifinished	497,199	699,080	422,911	537,030
Plate	167,416	245,035	172,083	173,292
Sheet and strip	2,161,482	3,355,880	1,996,522	1,526,290
Bars & certain shapes[1]	451,278	585,849	536,713	644,677
Wire rod	106,632	166,455	70,846	62,31
Wire	70,052	89,415	90,138	90,361
Wire products	41,548	51,552	56,573	71,370
Structural shapes & units	495,007	657,019	446,412	498,413
Rails & related products	379,039	108,056	74,208	115,447
Pipe and tube	470,779	753,109	679,283	568,414
Total	4,840,433	6,711,450	4,545,690	4,287,605
Carbon & certain alloy[2] steel:				
Semifinished	515,848	679,017	417,424	529,560
Plate	133,760	235,842	165,485	166,481
Sheet and strip	2,099,903	3,257,888	1,918,453	1,465,044
Bars & certain shapes	428,311	560,268	510,804	626,675
Wire rod	101,219	162,231	68,590	59,749
Wire	66,453	86,775	87,957	87,811
Wire products	41,548	51,552	56,573	71,370
Structural shapes & units	495,007	657,019	446,412	498,413
Rails & related products	379,039	108,056	74,208	115,447
Pipe and tube	457,336	738,176	664,582	554,303
Total	4,718,426	6,536,824	4,410,489	4,174,853
Stainless & alloy tool steel:				
Stainless steel:				
Semifinished	6,472	20,063	5,487	7,470
Plate	8,534	9,193	6,598	6,811
Sheet and strip	63,947	97,991	78,069	61,246
Bars & certain shapes	16,005	16,989	19,935	11,457
Wire rod	5,413	4,224	2,256	2,561
Wire	3,599	2,640	2,181	2,550
Pipe and tube	13,443	14,934	14,701	14,111
Tool steel (all forms)	4,594	8,592	5,974	6,545
Total stainless and tool	122,007	174,626	135,201	112,752

[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; 4,033,607 short tons, 1993.

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

Table E-4
Steel mill products and certain fabricated steel products: Apparent U.S. consumption, by products and grades of steel, 1990-93

(Short tons)

Item	1990	1991	1992	1993
All grades of steel:				
Semifinished	3,782,196	3,895,453	4,214,257	6,917,576
Plate	5,897,720	4,818,982	5,082,916	5,327,873
Sheet and strip	52,164,088	47,052,075	53,253,678	56,317,498
Bars & certain shapes[1]	15,394,638	13,296,159	14,051,391	15,175,088
Wire rod	5,198,349	5,046,063	5,562,500	6,210,222
Wire	1,899,011	1,627,768	1,751,896	1,773,466
Wire products	(2)	(2)	(2)	(2)
Structural shapes & units	6,618,407	5,623,128	5,859,507	6,052,175
Rails & related products	489,109	681,725	750,792	799,210
Pipe and tube	6,770,200	6,470,277	5,062,088	5,933,114
Total	98,213,718	88,511,630	95,589,025	104,506,222
Carbon & certain alloy[3] steel:				
Semifinished	3,659,738	3,786,810	4,115,749	6,766,488
Plate	5,805,764	4,717,472	4,979,102	5,209,752
Sheet and strip	51,002,105	45,927,322	51,974,403	54,847,751
Bars & certain shapes	15,138,353	13,038,494	13,782,675	14,867,146
Wire rod	5,146,047	4,990,468	5,495,619	6,146,888
Wire	1,861,082	1,589,864	1,710,530	1,729,848
Wire products	(2)	(2)	(2)	(2)
Structural shapes & units	6,618,407	5,623,128	5,859,507	6,052,175
Rails & related products	489,109	681,725	750,792	799,210
Pipe and tube	6,695,050	6,402,759	5,002,657	5,878,361
Total	96,415,655	86,758,042	93,671,034	102,297,619
Stainless & alloy tool steel:				
Stainless steel:				
Semifinished	97,337	108,643	98,508	151,088
Plate	117,078	101,509	103,814	118,121
Sheet and strip	1,159,616	1,124,754	1,279,275	1,469,746
Bars & certain shapes	166,238	169,909	172,857	195,794
Wire rod	52,302	55,595	66,882	63,334
Wire	37,929	37,904	41,366	43,618
Pipe and tube	75,150	67,517	59,430	54,753
Tool steel (all forms)	92,415	87,756	95,859	112,149
Total stainless and tool	1,798,065	1,753,587	1,917,991	2,208,603

[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; 104,347,921 short tons, 1993.

Source: Compiled from data of the American Iron & Steel Institute, and official statistics of the U.S. Department of Commerce.

Table E-5
Steel mill products and certain fabricated steel products: U.S. imports as a percent of apparent consumption, by products and grades of steel, 1990-93

(Percent)

Item	1990	1991	1992	1993
All grades of steel:				
Semifinished	62.5	52.5	55.6	71.9
Plate	15.8	16.4	17.6	13.7
Sheet and strip	14.8	15.1	16.5	13.4
Bars & certain shapes[1]	7.3	7.8	8.2	10.0
Wire rod	18.8	16.8	20.6	22.5
Wire	57.5	55.5	58.1	64.5
Wire products	(2)	(2)	(2)	(2)
Structural shapes & units	15.4	10.7	10.1	12.3
Rails & related products	71.5	44.5	39.9	33.6
Pipe and tube	38.2	42.3	30.5	34.7
Total	18.5	18.5	18.6	19.5
Carbon & certain alloy[3] steel:				
Semifinished	62.9	52.7	56.1	71.8
Plate	15.9	16.5	17.6	13.7
Sheet and strip	14.8	15.1	16.5	13.1
Bars & certain shapes	6.8	7.2	7.7	9.4
Wire rod	18.6	16.5	20.1	22.1
Wire	57.7	55.8	58.4	64.8
Wire products	(2)	(2)	(2)	(2)
Structural shapes & units	15.4	10.7	10.1	12.3
Rails & related products	71.5	44.5	39.9	33.6
Pipe and tube	38.0	42.0	30.0	34.2
Total	18.4	18.4	18.5	19.2
Stainless & alloy tool steel:				
Stainless steel:				
Semifinished	62.5	45.1	37.7	75.1
Plate	8.9	13.4	14.7	16.1
Sheet and strip	14.9	15.7	17.7	24.5
Bars & certain shapes	26.8	30.9	33.3	35.8
Wire rod	44.2	46.6	59.2	64.3
Wire	48.3	45.0	46.1	50.4
Pipe and tube	62.8	71.4	71.7	79.5
Tool steel (all forms)	42.5	51.5	39.6	45.6
Total stainless and tool	23.2	24.4	24.8	32.6

[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; 19.1 percent, 1993.

Source: Compiled from data of the American Iron & Steel Institute, and official statistics of the U.S. Department of Commerce.

Table E-6
Steel mill products and certain fabricated steel products: U.S. imports for consumption, U.S. exports, by selected countries and country groups, 1990-93

(Short tons)

Item	1990	1991	1992	1993
U.S. imports for consumption:				
Canada	3,203,970	3,189,823	4,493,860	5,093,245
Germany	1,591,850	1,448,397	1,383,401	1,920,246
Japan	3,205,475	2,880,969	2,716,559	1,852,809
Brazil	1,486,654	1,321,907	1,565,028	1,449,134
Korea	1,520,641	1,583,466	1,759,996	1,181,779
France	1,161,981	929,415	962,084	1,166,881
Italy	382,145	330,724	267,509	1,072,949
Mexico	689,260	534,216	456,236	893,621
Netherlands	459,375	494,184	563,949	742,267
Belgium	485,121	452,790	397,624	726,661
United Kingdom	823,983	626,679	619,573	707,917
Australia	310,515	368,973	369,910	439,439
Republic of South Africa	1,290	415	254,958	406,554
Sweden	295,108	302,844	343,420	279,663
Spain	346,450	222,981	212,128	275,161
All others	2,179,894	1,693,533	1,414,271	2,185,643
Total	18,143,711	16,381,316	17,780,504	20,393,968
East Asia	5,098,669	4,689,214	4,680,736	3,296,709
EU-12	5,550,937	4,749,489	4,627,807	6,930,701
Eastern Europe	169,471	201,883	110,322	194,592
LAIA[1]	2,607,940	2,184,428	2,215,447	2,654,271
U.S. exports:				
Canada	2,041,948	1,729,394	1,481,796	1,762,054
Mexico	730,368	1,370,880	1,464,634	1,024,569
Taiwan	20,268	441,809	53,324	261,974
Ecuador	48,803	32,850	71,428	112,504
Japan	479,781	704,128	134,455	105,597
China	9,093	100,367	97,331	101,681
Hong Kong	24,219	50,857	61,192	68,246
Colombia	20,377	14,971	66,597	48,779
United Kingdom	49,717	47,017	66,152	44,954
Thailand	63,403	37,506	81,927	43,777
All others	1,352,458	2,181,671	966,854	713,469
Total	4,840,433	6,711,450	4,545,690	4,287,605
East Asia	1,001,759	2,435,240	643,201	683,868
EU-12	331,469	273,576	201,201	149,667
Eastern Europe	1,627	2,244	3,672	4,439
LAIA[1]	895,848	1,596,980	1,735,554	1,294,449

[1] Latin American Integration Association.

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

Table E-7
Carbon and certain alloy[1] semifinished steel: U.S. imports for consumption, U.S. exports, by selected countries and country groups, 1990-93

(Short tons)

Item	1990	1991	1992	1993
U.S. imports for consumption:				
Brazil	813,302	704,348	967,561	1,083,108
Germany	238,170	244,191	282,030	654,325
Italy	49,399	29	6	646,301
France	122,970	125,539	39,083	537,021
Mexico	235,733	201,417	124,381	449,445
Belgium	88,307	60,690	97,312	349,205
Australia	129,746	160,936	149,901	314,715
Canada	188,925	82,534	177,583	220,378
Netherlands	60,499	63,861	69,044	201,339
United Kingdom	289,099	212,479	223,297	154,636
Sweden	64,589	90,597	76,174	76,814
Russia	0	0	0	59,495
Venezuela	0	0	44,130	44,372
Japan	9,574	3,450	21	27,974
Finland	6,383	46,472	31,939	23,832
All others	5,301	66	24,682	36,166
Total	2,301,998	1,996,610	2,307,144	4,879,125
East Asia	9,679	3,451	21,688	28,015
EU-12	852,870	706,828	710,791	2,565,254
Eastern Europe	45	0	0	1,165
LAIA[2]	1,049,244	905,765	1,136,072	1,576,925
U.S. exports:				
Taiwan	663	184,829	23,917	165,432
Ecuador	39,225	11,869	58,739	101,016
Mexico	15,231	58,606	169,090	91,049
Canada	89,628	64,671	30,603	66,264
Japan	66,077	54,715	6,606	33,035
China	44	96	105	21,980
Panama	92	747	3,898	8,028
Philippines	2	8	149	7,922
Dominican Republic	43,091	5,731	3,722	7,031
Thailand	27,609	1,447	76	4,465
All others	234,187	296,297	120,520	23,339
Total	515,848	679,017	417,424	529,560
East Asia	145,864	374,529	75,978	234,236
EU-12	52,558	40,556	23,087	8,350
Eastern Europe	0	2	14	0
LAIA[2]	61,725	76,435	252,335	194,739

[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 E-8
Carbon and certain alloy[1] steel plate[2]: U.S. imports for consumption, U.S. exports, by selected countries and country groups, 1990-93

(Short tons)

Item	1990	1991	1992	1993
U.S. imports for consumption:				
Ukraine	0	0	13,835	116,752
Republic of South Africa	0	0	79,295	102,752
India	62,315	0	18,124	97,460
Canada	86,548	92,872	202,904	83,566
Belgium	123,382	97,096	62,666	62,468
Sweden	111,517	87,154	113,894	36,958
Russia	0	0	0	31,515
The Czech Republic	0	0	0	26,711
Macedonia	0	0	18,115	26,061
Germany	59,855	47,197	31,478	23,520
Finland	83,803	55,762	47,579	23,200
Japan	23,122	27,425	10,656	15,231
France	18,556	20,064	14,696	13,028
Brazil	61,723	73,958	50,508	12,588
Denmark	6,694	2,815	3,217	11,498
All others	285,312	274,659	211,205	8,982
Total	922,826	779,002	878,172	692,291
East Asia	44,483	42,611	20,243	31,060
EU-12	333,940	291,632	193,350	95,774
Eastern Europe	79,915	106,306	47,924	30,591
LAIA[3]	103,243	93,301	110,505	13,087
U.S. exports:				
Canada	104,891	79,648	54,275	61,349
Mexico	8,288	37,765	66,617	49,692
Japan	93	47,684	6,119	19,651
Taiwan	157	11,436	4,595	18,128
Korea	53	33,687	17,716	12,091
Turkey	44	0	115	628
Chile	48	297	242	497
Venezuela	1,137	534	10,885	403
Surinam	411	209	295	353
Guyana	0	45	354	351
All others	18,638	24,537	4,272	3,339
Total	133,760	235,842	165,485	166,481
East Asia	12,181	112,521	30,245	50,172
EU-12	2,474	1,310	263	458
Eastern Europe	0	33	0	0
LAIA[3]	11,013	40,132	77,947	51,055

[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 E-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, 1990-93

(Short tons)

Item	1990	1991	1992	1993
U.S. imports for consumption:				
Canada	1,055,992	1,158,944	1,933,969	2,159,802
Japan	1,945,407	1,655,243	1,796,481	816,681
Germany	855,292	684,639	777,922	768,143
Korea	865,358	953,719	1,239,400	586,675
Netherlands	383,180	416,072	478,970	504,213
France	677,938	501,952	657,044	276,636
Italy	174,742	173,042	202,651	258,294
Republic of South Africa	0	0	130,982	219,125
Mexico	130,962	88,650	113,764	179,271
Belgium	154,385	209,306	143,226	168,243
Finland	107,072	81,194	94,010	138,453
United Kingdom	72,326	57,572	61,851	124,489
Australia	150,757	182,149	197,748	89,246
Russia	0	0	3,333	84,375
Brazil	306,719	254,375	313,010	80,779
All others	643,895	514,062	422,778	754,057
Total	7,524,025	6,930,919	8,567,140	7,208,481
East Asia	2,912,560	2,662,545	3,073,699	1,496,615
EU-12	2,411,822	2,144,354	2,429,159	2,334,209
Eastern Europe	26,912	15,448	38,611	130,726
LAIA[3]	589,106	467,724	471,219	379,300
U.S. exports:				
Canada	739,050	732,203	650,698	706,579
Mexico	368,733	743,429	751,139	463,473
Japan	336,185	527,868	110,320	44,023
Taiwan	7,537	222,969	7,140	36,962
Italy	70,018	43,004	43,279	31,508
Hong Kong	20,997	28,667	40,091	29,505
India	20,805	12,509	17,332	21,331
Brazil	8,922	5,446	18,923	18,510
Pakistan	20,894	18,099	20,571	18,297
Argentina	18,004	17,836	14,349	9,388
All others	488,757	905,857	244,611	85,468
Total	2,099,903	3,257,888	1,918,453	1,465,044
East Asia	643,125	1,536,791	284,435	133,061
EU-12	150,432	99,314	62,669	49,387
Eastern Europe	520	152	344	332
LAIA[3]	409,555	803,492	809,943	507,442

[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 E-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, 1990-93

(Short tons)

Item	1990	1991	1992	1993
U.S. imports for consumption:				
Canada	339,393	341,964	512,747	732,079
United Kingdom	162,112	159,667	139,106	182,128
Brazil	84,587	85,635	55,550	85,535
Japan	92,407	84,049	86,218	75,714
France	65,807	68,718	60,035	60,077
Turkey	31,970	27,370	60,002	56,078
Germany	53,152	48,104	52,893	44,888
Mexico	13,193	11,194	7,254	26,103
Netherlands	3,676	3,599	3,010	22,106
Australia	996	2,005	3,802	18,315
India	9,639	5,740	10,687	13,928
Spain	16,397	10,259	9,598	12,823
Trinidad and Tobago	31,873	8,520	11,461	10,720
Sweden	4,759	5,775	5,472	9,982
Argentina	22,515	6,389	375	7,716
All others	102,778	74,857	38,987	34,942
Total	1,035,255	943,845	1,057,195	1,393,135
East Asia	146,212	110,440	99,060	83,312
EU-12	304,883	292,972	270,071	327,518
Eastern Europe	2,212	730	344	3,585
LAIA[2]	159,525	146,281	80,836	126,197
U.S. exports:				
Canada	257,120	226,334	195,480	293,536
Mexico	49,232	171,716	158,183	127,117
China	74	86	11,220	44,844
Taiwan	1,448	904	7,879	34,464
Hong Kong	651	574	436	26,794
Thailand	6,628	21	24,259	22,526
Guatemala	8,587	8,468	16,113	9,081
Malaysia	5,008	143	7,324	8,134
United Arab Emirates	44	116	17	5,987
Korea	15,016	1,188	27,197	5,398
All others	84,505	150,718	62,695	48,795
Total	428,311	560,268	510,804	626,675
East Asia	42,175	28,050	79,835	143,972
EU-12	12,255	7,242	6,988	11,574
Eastern Europe	102	110	61	552
LAIA[2]	71,141	180,199	178,583	134,521

[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 E-11
Carbon and certain alloy[1] steel wire rod: U.S. imports for consumption, U.S. exports, by selected countries and country groups, 1990-93

(Short tons)

Item	1990	1991	1992	1993
U.S. imports for consumption:				
Canada	344,955	378,768	505,521	488,006
Japan	182,818	193,795	229,977	234,623
Germany	7,467	17,051	30,813	188,480
France	77,171	50,167	3,781	135,012
Trinidad and Tobago	36,782	45,466	80,986	93,648
Brazil	70,254	19,547	90,035	46,845
Belgium	111	126	1,357	41,277
United Kingdom	7,410	705	6,310	39,983
Turkey	89,832	64,336	2,693	21,459
Netherlands	264	354	613	17,177
Australia	9,962	16,836	11,128	9,891
Italy	1,824	2,070	1,226	8,056
Spain	36,721	471	52,578	7,628
Switzerland	3	15	50	7,348
The Czech Republic	0	0	0	4,924
All others	90,540	31,320	39,736	12,129
Total	956,113	821,026	1,106,805	1,356,489
East Asia	189,584	194,490	230,639	235,308
EU-12	147,053	83,344	115,422	439,255
Eastern Europe	0	0	0	7,323
LAIA[2]	117,364	29,080	104,989	51,786
U.S. exports:				
Mexico	33,667	51,094	35,768	29,943
Canada	45,217	54,997	23,842	23,091
China	0	0	6	3,345
Guyana	0	170	0	810
Venezuela	422	1,094	1,270	739
Korea	363	24,557	94	460
Costa Rica	0	25	22	389
Peru	107	908	0	105
Argentina	0	1	381	82
Germany	85	97	11	74
All others	21,359	29,290	7,196	711
Total	101,219	162,231	68,590	59,749
East Asia	20,496	42,925	6,068	3,923
EU-12	566	541	214	239
Eastern Europe	0	0	0	0
LAIA[2]	34,502	60,630	37,543	0,947

[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 E-12
Carbon and certain alloy[1] steel wire: U.S. imports for consumption, U.S. exports, by selected countries and country groups, 1990-93

(Short tons)

Item	1990	1991	1992	1993
U.S. imports for consumption:				
Canada	160,741	153,425	182,612	226,810
Japan	3,483	9,440	4,382	68,223
Belgium	45,978	33,139	36,734	43,482
France	29,468	24,759	28,062	30,787
United Kingdom	19,881	15,959	16,648	19,676
Brazil	8,504	13,397	9,962	13,760
Germany	13,996	11,351	11,905	10,897
Taiwan	8,060	10,308	11,835	10,890
Sweden	7,240	7,738	7,119	10,278
China	8,228	7,418	7,397	9,719
Turkey	142	0	20	8,607
Korea	4,003	4,944	3,525	7,680
Venezuela	6,092	8,124	6,645	7,607
India	6,759	6,653	5,300	5,584
Argentina	11,209	2,117	1,909	5,323
All others	20,223	15,978	17,838	26,901
Total	414,008	374,750	411,892	506,223
East Asia	84,131	82,454	87,910	98,041
EU-12	115,313	88,833	97,861	112,889
Eastern Europe	122	215	223	385
LAIA[2]	30,091	28,282	21,997	30,690
U.S. exports:				
Canada	34,294	33,308	39,994	47,416
Mexico	13,064	18,163	25,919	26,893
Brazil	625	3,987	687	1,951
Philippines	31	100	229	1,032
Venezuela	328	175	331	990
Germany	1,004	1,091	867	835
United Kingdom	540	1,345	696	830
Costa Rica	677	792	594	721
Panama	85	328	94	642
Korea	82	22,124	114	605
All others	15,722	5,363	18,434	5,897
Total	66,453	86,775	87,957	87,811
East Asia	11,675	22,932	11,768	2,358
EU-12	1,986	2,820	2,391	2,363
Eastern Europe	635	985	682	253
LAIA[2]	14,792	22,628	27,363	30,823

[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 E-13
Carbon and certain alloy[1] steel wire products: U.S. imports for consumption, U.S. exports, by selected countries and country groups, 1990-93

(Short tons)

Item	1990	1991	1992	1993
U.S. imports for consumption:				
Korea	185,686	155,381	164,631	176,287
Canada	98,435	97,098	102,061	109,392
Japan	59,622	41,508	48,096	49,847
China	42,136	23,727	47,279	37,821
Spain	23,142	16,375	25,263	26,468
Mexico	34,023	26,959	27,825	23,660
Indonesia	22,699	14,540	26,684	20,670
Brazil	12,446	11,622	13,258	17,146
Italy	8,244	12,639	13,303	16,014
Taiwan	14,687	11,071	14,592	15,348
Belgium	16,284	10,201	12,905	14,531
Turkey	12,540	6,891	9,703	10,771
France	10,257	8,655	11,076	9,940
United Arab Emirates	10,333	7,294	6,659	8,622
Germany	7,164	6,222	7,899	7,069
All others	102,627	61,656	55,684	71,236
Total	660,325	511,839	586,916	614,823
East Asia	333,007	249,162	305,438	307,181
EU-12	78,806	63,172	79,239	82,825
Eastern Europe	14,985	12,840	8,506	8,271
LAIA[2]	83,842	54,541	53,852	58,921
U.S. exports:				
Canada	18,671	21,473	28,376	36,253
Mexico	5,625	9,620	6,584	13,316
Panama	412	760	1,664	3,286
Russia	0	0	795	1,397
Dominican Republic	733	392	988	1,128
Australia	491	370	512	1,111
Bahamas	1,165	778	1,061	1,040
United Arab Emirates	226	148	85	798
Chile	535	536	935	792
Germany	836	919	725	566
All others	12,854	16,556	14,849	11,682
Total	41,548	51,552	56,573	71,370
East Asia	2,635	2,437	4,401	2,574
EU-12	3,937	3,185	2,086	1,918
Eastern Europe	13	33	22	13
LAIA[2]	6,797	12,654	9,644	15,727

[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 E-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, 1990-93

(Short tons)

Item	1990	1991	1992	1993
U.S. imports for consumption:				
Canada	278,669	217,538	233,622	275,218
United Kingdom	163,073	82,168	69,872	111,853
Luxembourg	160,457	88,005	101,856	102,884
Spain	93,138	41,845	19,445	52,765
Mexico	36,696	13,031	8,936	35,576
Japan	114,932	48,069	44,362	34,147
Germany	35,696	19,376	26,210	33,725
Belgium	42,548	22,295	32,745	26,837
Brazil	6,509	10,883	5,735	17,377
France	39,444	8,512	16,000	12,015
Russia	0	0	0	12,009
Republic of South Africa	0	299	15,266	7,143
Poland	15,062	24,309	3,231	6,929
Norway	1,121	39	105	2,581
Venezuela	183	165	152	1,681
All others	33,067	27,827	12,076	9,334
Total	1,020,593	604,361	589,613	742,074
East Asia	133,779	63,441	49,265	37,496
EU-12	537,513	263,352	267,931	342,570
Eastern Europe	15,193	24,371	3,231	7,064
LAIA[2]	48,745	31,620	14,937	54,639
U.S. exports:				
Canada	220,316	202,996	139,901	160,709
Mexico	80,558	120,608	133,102	113,828
China	1,007	636	75	22,304
Guatemala	2,075	2,500	3,171	16,229
Venezuela	4,586	8,477	13,780	16,172
United Kingdom	6,997	13,166	27,140	14,839
Philippines	1,307	511	6,310	14,207
Trinidad and Tobago	859	404	1,174	13,384
Panama	2,324	5,901	7,313	10,083
Thailand	6,298	2,671	19,990	7,548
All others	168,681	299,149	94,456	109,110
Total	495,007	657,019	446,412	498,413
East Asia	81,859	173,428	50,577	76,719
EU-12	33,485	36,435	34,839	28,937
Eastern Europe	89	655	68	52
LAIA[2]	88,965	133,113	152,611	151,944

[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 E-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, 1990-93

(Short tons)

Item	1990	1991	1992	1993
U.S. imports for consumption:				
Canada	200,252	144,179	133,453	136,602
Japan	87,191	97,927	79,538	93,357
Luxembourg	20,156	18,162	23,979	12,686
Germany	12,930	7,791	7,069	10,589
Austria	6,319	3,642	7,505	3,761
Brazil	1,336	1,272	2,770	3,152
Korea	4,025	3,609	3,312	1,260
France	552	72	5,336	999
Argentina	2	2,999	173	984
Australia	3,657	1,324	1,769	940
Poland	0	6	454	832
United Kingdom	9,977	17,636	30,948	647
Belgium	195	191	321	533
Republic of South Africa	1,290	63	10	456
Italy	587	461	368	359
All others	1,084	1,462	2,414	1,608
Total	349,555	303,596	299,418	268,764
East Asia	91,557	101,908	83,125	95,065
EU-12	44,423	47,188	68,024	25,841
Eastern Europe	30	46	455	869
LAIA[2]	1,523	4,510	3,230	4,371
U.S. exports:				
Canada	274,018	25,407	32,837	50,768
Mexico	88,527	63,187	29,051	45,965
Egypt	2,471	4,345	3,602	4,378
Peru	797	1,017	1,128	2,089
Taiwan	153	152	805	1,672
Australia	402	896	412	1,509
Belize	390	587	912	1,297
Chile	297	253	108	956
Panama	175	972	81	706
Korea	311	294	207	648
All others	11,498	10,946	5,064	5,457
Total	379,039	108,056	74,208	115,447
East Asia	1,138	1,621	1,506	2,645
EU-12	305	684	1,152	1,075
Eastern Europe	70	55	8	0
LAIA[2]	93,212	67,276	31,731	50,465

[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 E-16
Carbon and certain alloy[1] steel pipe and tube: U.S. imports for consumption, U.S. exports, by selected countries and country groups, 1990-93

(Short tons)

Item	1990	1991	1992	1993
U.S. imports for consumption:				
Canada	400,098	473,741	459,583	576,166
Korea	374,528	397,957	287,013	361,099
Japan	540,343	579,441	263,132	329,051
Germany	276,053	334,299	120,549	121,661
Mexico	140,133	133,064	68,642	111,547
Italy	116,589	101,440	18,917	85,501
Argentina	90,315	71,650	45,992	82,782
Brazil	111,315	138,046	43,673	71,547
Republic of South Africa	0	0	20,059	44,111
France	83,086	82,614	30,827	40,783
Spain	33,736	25,830	11,398	32,592
Thailand	11,312	6,519	20,466	29,798
Turkey	9,010	5,709	5,950	15,092
United Kingdom	19,866	14,188	23,899	14,119
Netherlands	5,975	7,919	9,055	12,822
All others	329,828	314,738	71,723	83,884
Total	2,542,189	2,687,154	1,500,877	2,012,557
East Asia	1,037,566	1,053,805	581,110	728,032
EU-12	573,065	616,761	227,256	320,504
Eastern Europe	29,638	39,145	10,840	4,155
LAIA[2]	391,387	381,849	162,346	276,122
U.S. exports:				
Canada	216,756	247,967	244,367	269,279
Mexico	29,676	41,690	42,937	47,478
Russia	0	0	34,342	35,361
Colombia	4,961	6,995	29,614	31,841
United Kingdom	9,009	8,282	13,154	15,521
Syria	646	6,979	3,044	14,080
Algeria	316	43,178	22,560	13,650
Venezuela	18,685	71,970	19,119	11,994
Trinidad and Tobago	8,252	8,612	11,457	11,930
Italy	39,183	21,674	9,170	6,037
All others	129,852	280,829	234,818	97,133
Total	457,336	738,176	664,582	554,303
East Asia	29,009	113,178	88,451	18,568
EU-12	60,468	50,794	46,958	30,948
Eastern Europe	90	174	2,454	3,136
LAIA[2]	62,876	140,473	106,071	106,200

[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 E-17
Total, carbon and certain alloy[1] steel products: U.S. imports for consumption, U.S. exports, by selected countries and country groups, 1990-93

(Short tons)

Item	1990	1991	1992	1993
U.S. imports for consumption:				
Canada	3,154,008	3,141,061	4,444,054	5,008,020
Germany	1,559,775	1,420,222	1,348,768	1,863,298
Japan	3,118,898	2,790,348	2,622,861	1,744,848
Brazil	1,476,696	1,313,084	1,552,062	1,431,837
Korea	1,502,300	1,562,912	1,739,892	1,150,756
France	1,125,248	893,852	915,940	1,116,296
Italy	368,274	312,350	247,679	1,023,655
Mexico	665,777	501,740	413,781	828,755
Netherlands	458,713	493,465	563,182	740,411
Belgium	481,998	443,048	389,542	710,257
United Kingdom	792,907	600,606	597,606	654,591
Australia	309,960	368,963	369,906	439,397
Republic of South Africa	1,290	413	248,381	380,529
Sweden	256,296	263,341	303,499	228,728
Spain	312,752	190,585	174,899	219,557
All others	2,141,993	1,657,113	1,373,117	2,133,027
Total	17,726,887	15,953,102	17,305,171	19,673,962
East Asia	4,982,558	4,564,307	4,552,176	3,140,127
EU-12	5,399,689	4,598,435	4,459,103	6,646,640
Eastern Europe	169,052	199,101	110,133	194,134
LAIA[2]	2,574,068	2,142,954	2,159,982	2,572,039
U.S. exports:				
Canada	1,999,961	1,689,005	1,440,372	1,715,244
Mexico	692,601	1,315,877	1,418,389	1,008,753
Taiwan	17,553	437,815	51,094	259,859
Ecuador	48,750	32,785	71,372	112,383
Japan	478,055	701,950	132,888	102,029
China	8,646	100,217	97,126	100,339
Hong Kong	23,021	46,844	59,549	64,668
Colombia	19,920	14,152	66,067	47,568
Thailand	63,108	37,057	81,640	43,512
Italy	125,208	77,458	55,465	43,154
All others	1,241,602	2,083,663	936,526	677,345
Total	4,718,426	6,536,824	4,410,489	4,174,853
East Asia	990,157	2,408,414	633,263	668,226
EU-12	318,466	242,881	180,649	135,248
Eastern Europe	1,518	2,198	3,653	4,338
LAIA[2]	854,578	1,537,031	1,683,771	1,273,863

[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 US Department of Commerce.

Table E-18
Stainless semifinished steel: U.S. imports for consumption, U.S. exports, by selected countries and country groups, 1990-93

(Short tons)

Item	1990	1991	1992	1993
U.S. imports for consumption:				
Canada	26,379	21,273	19,831	42,837
United Kingdom	11,705	7,316	157	26,935
Republic of South Africa	0	0	213	17,866
Sweden	12,320	14,318	11,385	16,819
Germany	104	1,012	2,783	4,564
Italy	728	2,354	1,840	2,234
Japan	1,679	2,101	654	997
Belgium	2	0	0	925
Spain	7,502	66	29	129
Mexico	275	65	107	95
Korea	85	1	0	54
Finland	0	0	0	4
France	0	1	117	2
China	0	0	0	1
Switzerland	0	0	0	0
All others	43	455	61	1
Total	60,822	48,962	37,177	113,462
East Asia	1,764	2,101	654	1,052
EU-12	20,041	10,749	4,927	34,788
Eastern Europe	42	0	0	0
LAIA[1]	275	65	136	95
U.S. exports:				
Mexico	895	713	1,794	1,845
Dominican Republic	12	45	9	1,312
Canada	780	754	655	803
Jamaica	71	23	55	578
Korea	427	541	43	362
Japan	220	334	392	278
United Kingdom	313	458	275	246
Singapore	224	134	70	244
Hong Kong	65	34	248	214
China	0	9	24	174
All others	3,465	17,018	1,922	1,414
Total	16,472	20,063	5,487	7,470
East Asia	1,056	1,298	1,092	1,379
EU-12	1,339	15,155	542	696
Eastern Europe	0	9	0	0
LAIA[1]	1,440	1,510	2,140	1,995

[1] Latin American Integration Association.

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

Table E-19
Stainless steel plate[1]: U.S. imports for consumption, U.S. exports, by selected countries and country groups, 1990-93

(Short tons)

Item	1990	1991	1992	1993
U.S. imports for consumption:				
Belgium	973	4,070	3,358	5,863
Republic of South Africa	0	2	1,959	3,393
Germany	1,868	2,689	2,209	2,172
Japan	2,462	2,508	2,003	1,313
Finland	905	397	798	1,191
Ukraine	0	0	0	945
Sweden	1,031	659	673	859
Brazil	0	0	89	686
Canada	42	18	135	665
United Kingdom	2,951	2,598	2,845	625
France	32	65	679	483
Spain	88	49	212	386
Korea	0	17	0	267
Austria	112	464	259	175
India	0	0	0	19
All others	0	66	13	20
Total	10,464	13,602	15,231	19,063
East Asia	2,462	2,525	2,003	1,579
EU-12	5,911	9,538	9,316	9,538
Eastern Europe	0	0	0	0
LAIA[2]	0	0	89	686
U.S. exports:				
Canada	6,390	4,029	5,307	5,061
Portugal	0	0	0	764
Mexico	873	938	811	493
Venezuela	0	0	0	126
Germany	187	0	93	50
Dominican Republic	0	0	18	47
Brazil	2	13	0	42
Australia	2	0	22	41
Trinidad and Tobago	0	0	0	38
Honduras	16	87	70	35
All others	1,064	4,125	277	114
Total	8,534	9,193	6,598	6,811
East Asia	738	3,545	174	78
EU-12	299	423	153	838
Eastern Europe	0	17	0	0
LAIA[2]	926	985	813	669

[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 E-20
Stainless steel sheet and strip[1]: U.S. imports for consumption, U.S. exports, by selected countries and country groups, 1990-93

(Short tons)

Item	1990	1991	1992	1993
U.S. imports for consumption:				
Mexico	22,362	31,782	41,268	64,095
Japan	43,270	43,150	44,261	58,100
Spain	15,893	17,318	22,978	39,986
France	24,833	23,317	26,263	33,019
Germany	12,114	12,216	14,962	31,453
Italy	3,264	4,483	5,165	26,322
Korea	10,002	8,687	13,523	20,648
Canada	2,741	3,326	14,089	19,050
United Kingdom	10,558	10,469	11,974	17,157
Sweden	6,008	7,003	7,814	14,002
Finland	14,904	8,438	11,749	11,383
Belgium	1,629	5,205	4,167	8,856
Brazil	2,239	730	2,091	5,101
Republic of South Africa	0	0	4,406	4,574
India	2,773	361	1,145	4,361
All others	443	346	332	1,948
Total	173,033	176,830	226,186	360,054
East Asia	53,376	51,906	57,817	79,301
EU-12	68,491	73,078	85,568	157,297
Eastern Europe	34	19	0	0
LAIA[2]	24,641	32,511	43,359	69,195
U.S. exports:				
Canada	19,612	22,743	22,131	27,750
Mexico	27,952	42,876	35,168	5,017
France	528	1,527	3,033	4,234
Hong Kong	624	3,175	918	3,181
United Kingdom	3,892	3,800	1,545	2,862
Germany	700	1,963	3,667	2,432
Japan	465	728	217	2,227
Australia	794	781	666	2,159
Taiwan	985	1,554	1,568	1,698
Korea	1,502	7,240	457	1,282
All others	6,894	11,604	8,698	8,405
Total	63,947	97,991	78,069	61,246
East Asia	4,006	14,676	4,053	9,548
EU-12	5,995	9,829	10,999	10,124
Eastern Europe	105	19	9	98
LAIA[2]	28,932	44,854	37,446	7,338

[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 E-21
Stainless steel bars and shapes: U.S. imports for consumption, U.S. exports, by selected countries and country groups, 1990-93

(Short tons)

Item	1990	1991	1992	1993
U.S. imports for consumption:				
Japan	17,777	19,988	19,742	20,965
Canada	5,374	5,089	5,762	8,466
Spain	4,127	5,626	5,971	7,773
Italy	1,743	3,347	4,537	7,556
Brazil	3,318	3,334	4,716	5,096
France	2,444	3,047	4,293	4,402
India	1,084	1,404	2,226	4,314
Korea	2,610	3,822	3,343	3,546
Sweden	3,308	3,595	3,379	2,221
Germany	717	566	1,308	2,045
United Kingdom	1,770	1,757	1,240	1,574
Slovenia	0	0	63	580
Poland	0	0	60	300
Switzerland	15	321	312	287
Taiwan	3	125	150	283
All others	235	473	395	659
Total	44,526	52,493	57,499	70,067
East Asia	20,389	23,946	23,275	25,037
EU-12	10,817	14,349	17,396	23,407
Eastern Europe	53	259	132	300
LAIA[1]	3,351	3,349	4,723	5,183
U.S. exports:				
Canada	4,479	3,590	3,340	2,755
Mexico	639	1,202	1,695	2,181
Saudi Arabia	190	207	489	1,324
Dominican Republic	64	177	419	931
Japan	697	963	777	511
United Kingdom	1,552	1,285	6,334	509
Venezuela	577	596	1,255	507
Iceland	4	2	0	352
France	77	153	140	327
Switzerland	187	272	168	234
All others	7,539	8,543	5,318	1,825
Total	16,005	16,989	19,935	11,457
East Asia	3,055	3,096	1,835	920
EU-12	3,525	3,294	7,268	1,151
Eastern Europe	0	0	1	2
LAIA[1]	1,428	2,073	3,227	2,922

[1] Latin American Integration Association.

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

Table E-22
Stainless steel wire rod: U.S. imports for consumption, U.S. exports, by selected countries and country groups, 1990-93

(Short tons)

Item	1990	1991	1992	1993
U.S. imports for consumption:				
Japan	5,195	4,574	7,356	6,559
France	4,525	5,547	10,475	6,205
Sweden	4,621	4,244	5,191	6,023
Taiwan	0	126	924	4,681
Spain	3,354	3,309	3,828	4,603
Italy	2,484	2,922	2,890	4,117
India	97	1,729	4,305	3,680
Korea	861	1,604	750	2,800
United Kingdom	184	120	523	1,131
Brazil	1,413	1,671	3,243	788
Germany	218	0	98	112
Netherlands	8	0	21	4
Mexico	0	0	0	1
Republic of South Africa	0	0	0	1
Austria	0	3	0	0
All others	168	48	10	0
Total	23,128	25,897	39,616	40,707
East Asia	6,057	6,305	9,030	14,040
EU-12	10,772	11,898	17,836	16,173
Eastern Europe	0	0	0	0
LAIA[1]	1,413	1,671	3,243	789
U.S. exports:				
Canada	1,666	674	215	969
Japan	29	33	18	306
Venezuela	29	63	191	258
Germany	59	25	20	171
Mexico	1,439	875	156	143
Israel	75	144	45	100
United Kingdom	73	105	72	71
China	3	0	6	63
Argentina	1	6	65	58
Surinam	0	0	0	52
All others	2,040	2,300	1,467	370
Total	5,413	4,224	2,256	2,561
East Asia	225	1,186	593	519
EU-12	215	161	155	304
Eastern Europe	0	0	0	0
LAIA[1]	2,038	1,702	1,076	478

[1] Latin American Integration Association.

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

Table E-23
Stainless steel wire: U.S. imports for consumption, U.S. exports, by selected countries and country groups, 1990-93

(Short tons)

Item	1990	1991	1992	1993
U.S. imports for consumption:				
Sweden	2,051	2,531	3,099	3,121
Canada	2,404	2,156	2,370	2,884
Italy	1,081	1,447	1,271	2,673
Japan	3,393	2,677	2,702	2,595
France	2,354	1,862	1,894	1,489
United Kingdom	1,441	1,082	1,560	1,446
Taiwan	867	1,441	2,090	1,420
Korea	619	778	905	1,313
India	1,613	337	341	1,124
Spain	635	932	677	1,005
Belgium	448	386	511	621
Switzerland	284	591	467	603
Thailand	175	105	191	600
Germany	484	361	646	495
Brazil	446	321	22	434
All others	32	47	342	146
Total	18,328	17,054	19,089	21,969
East Asia	5,055	5,002	5,904	5,945
EU-12	6,443	6,070	6,581	7,731
Eastern Europe	0	4	0	0
LAIA[1]	466	341	162	455
U.S. exports:				
Canada	1,311	1,119	1,029	1,164
Mexico	507	507	356	453
Germany	288	105	74	116
United Kingdom	177	171	96	102
France	58	51	26	88
Korea	78	12	43	61
Dominican Republic	44	0	5	50
Sweden	39	57	17	43
Chile	2	1	2	39
Panama	0	116	1	32
All others	1,094	499	533	402
Total	3,599	2,640	2,181	2,550
East Asia	388	122	140	156
EU-12	652	397	285	349
Eastern Europe	2	1	4	1
LAIA[1]	551	530	454	571

[1] Latin American Integration Association.

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

Table E-24
Stainless steel pipe and tube: U.S. imports for consumption, U.S. exports, by selected countries and country groups, 1990-93

(Short tons)

Item	1990	1991	1992	1993
U.S. imports for consumption:				
Japan	8,787	11,333	11,932	11,715
Canada	5,711	4,479	3,457	5,883
Italy	2,845	2,729	3,452	5,103
Taiwan	8,216	9,333	4,172	4,005
United Kingdom	724	1,238	2,409	3,302
Malaysia	0	159	3,573	2,449
Korea	3,470	5,391	1,445	1,701
France	1,561	1,446	1,504	1,675
Spain	2,084	4,969	3,400	1,612
Netherlands	412	650	675	1,225
Singapore	1,038	1,529	1,991	801
Thailand	152	191	871	657
Sweden	3,225	908	690	640
Germany	6,885	517	1,447	516
Mexico	597	511	607	493
All others	1,513	2,836	985	1,758
Total	47,220	48,218	42,612	43,535
East Asia	22,159	28,278	24,176	21,419
EU-12	14,525	11,554	12,904	13,440
Eastern Europe	0	1,993	1	1
LAIA[1]	598	526	618	584
U.S. exports:				
Canada	6,423	5,623	6,386	5,739
Mexico	3,458	2,652	3,911	3,513
Korea	579	2,050	590	789
Singapore	672	342	731	752
Nigeria	0	0	0	342
Brazil	17	6	82	273
China	183	46	80	268
Egypt	0	32	295	268
Italy	28	15	10	208
Chile	94	67	67	176
All others	1,988	4,102	2,550	1,782
Total	13,443	14,934	14,701	14,111
East Asia	1,834	2,673	1,849	2,173
EU-12	571	816	380	575
Eastern Europe	1	0	0	0
LAIA[1]	3,830	2,971	4,224	4,221

[1] Latin American Integration Association.

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

Table E-25
Alloy tool steel (all forms): U.S. imports for consumption, U.S. exports, by selected countries and country groups, 1990-93

(Short tons)

Item	1990	1991	1992	1993
U.S. imports for consumption:				
Germany	9,686	10,814	11,179	15,592
Sweden	6,247	6,246	7,687	7,250
Japan	4,015	4,291	5,047	5,717
Canada	7,142	12,371	4,151	5,440
Brazil	2,542	2,766	2,770	5,104
France	984	277	919	3,309
Austria	2,810	4,139	3,013	3,079
Taiwan	0	0	324	1,299
Italy	1,726	1,027	674	1,291
United Kingdom	1,741	1,493	1,259	1,156
Korea	694	254	138	695
China	74	299	191	496
Poland	289	276	56	158
Mexico	230	83	326	141
Belgium	58	82	7	128
All others	1,067	740	180	293
Total	39,304	45,158	37,923	51,150
East Asia	4,848	4,844	5,701	8,208
EU-12	14,247	13,818	14,177	21,688
Eastern Europe	289	506	56	158
LAIA[1]	3,127	3,011	3,134	5,245
U.S. exports:				
Canada	1,326	1,859	2,360	2,568
Mexico	2,005	5,241	2,355	2,170
China	63	0	1	700
Germany	231	270	338	229
Colombia	21	2	3	113
Taiwan	44	59	59	75
Trinidad and Tobago	0	0	0	72
Costa Rica	8	0	3	67
United Kingdom	33	177	159	53
Japan	79	47	33	49
All others	786	937	663	448
Total	4,594	8,592	5,974	6,545
East Asia	300	230	202	870
EU-12	408	621	769	381
Eastern Europe	0	0	5	0
LAIA[1]	2,124	5,322	2,403	2,392

[1] Latin American Integration Association.

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

Table E-26
Total, stainless and alloy tool steel products: U.S. imports for consumption, U.S. exports, by selected countries and country groups, 1990-93

(Short tons)

Item	1990	1991	1992	1993
U.S. imports for consumption:				
Japan	86,577	90,622	93,697	107,961
Canada	49,962	48,761	49,806	85,226
Mexico	23,483	32,476	42,455	64,865
Germany	32,075	28,175	34,633	56,948
Spain	33,698	32,396	37,230	55,604
United Kingdom	31,076	26,073	21,966	53,326
Sweden	38,812	39,503	39,920	50,936
France	36,733	35,562	46,144	50,584
Italy	13,870	18,374	19,830	49,295
Korea	18,341	20,554	20,104	31,023
Republic of South Africa	0	2	6,577	26,024
Brazil	9,958	8,823	12,966	17,297
Belgium	3,123	9,742	8,082	16,404
India	5,686	3,837	8,080	13,721
Finland	15,809	9,018	12,582	12,891
All others	17,622	24,296	21,262	27,901
Total	416,824	428,214	475,333	720,007
East Asia	116,110	124,908	128,560	156,582
EU-12	151,247	151,054	168,705	284,062
Eastern Europe	419	2,782	189	459
LAIA[1]	33,871	41,474	55,465	82,232
U.S. exports:				
Canada	41,987	40,390	41,424	46,810
Mexico	37,767	55,003	46,245	15,816
France	855	4,425	3,293	4,815
United Kingdom	6,379	6,347	8,662	4,006
Hong Kong	1,197	4,013	1,643	3,578
Japan	1,725	2,178	1,567	3,568
Germany	2,269	7,791	4,628	3,284
Korea	2,842	13,313	1,589	2,598
Australia	1,365	1,272	881	2,504
Dominican Republic	219	421	583	2,475
All others	25,402	39,475	24,686	23,299
Total	122,007	174,626	135,201	112,752
East Asia	11,602	26,826	9,937	15,642
EU-12	13,003	30,695	20,552	14,419
Eastern Europe	109	46	19	101
LAIA[1]	41,270	59,949	51,783	20,586

[1] Latin American Integration Association.

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

Table E-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, 1990-93

(1,000 dollars)

Item	1990	1991	1992	1993
U.S. imports for consumption:				
Carbon & certain alloy[1] steel:				
Semifinished	538,223	505,791	500,125	1,025,150
Plate	369,279	305,405	303,747	250,502
Sheet and strip	3,465,061	3,089,470	3,717,099	3,086,184
Bars & certain shapes	476,540	440,348	459,340	616,117
Wire rod	340,591	294,588	377,494	480,795
Wire	309,503	278,526	312,454	360,385
Wire products	658,004	527,030	604,201	646,520
Structural shapes & units	476,520	325,913	296,698	396,549
Rails & related products	136,287	134,028	146,054	140,226
Pipe and tube	1,473,676	7,661,570	894,401	1,143,233
Subtotal	8,243,685	7,562,669	7,611,614	8,145,661
Stainless & alloy tool steel:				
Stainless steel:				
Semifinished	79,442	73,116	55,367	129,127
Plate	25,949	35,120	33,566	36,872
Sheet and strip	344,553	348,586	423,746	633,706
Bars & certain shapes	118,157	133,704	133,954	149,893
Wire rod	56,004	60,057	78,746	77,044
Wire	71,776	69,145	73,179	78,583
Pipe and tube	186,548	194,508	173,769	161,252
Tool steel (all forms)	87,814	78,904	80,677	96,162
Subtotal	970,242	993,141	1,053,004	1,362,641
Total	9,213,927	8,555,810	8,664,618	9,508,302
U.S. exports:				
Carbon & certain alloy[1] steel:				
Semifinished	201,044	244,988	170,144	184,337
Plate	69,493	98,910	79,752	77,558
Sheet and strip	1,112,867	1,472,553	1,102,121	932,151
Bars & certain shapes	235,173	284,511	271,458	309,102
Wire rod	46,256	64,478	34,571	27,339
Wire	76,122	91,063	94,553	107,740
Wire products	90,155	90,003	115,954	132,016
Structural shapes & units	427,462	595,121	403,889	485,054
Rails & related products	83,716	82,168	64,789	89,498
Pipe and tube	515,023	752,052	726,230	616,680
Subtotal	2,857,312	3,775,847	3,063,460	2,961,475
Stainless & alloy tool steel:				
Stainless steel:				
Semifinished	21,655	49,913	30,847	28,953
Plate	19,175	21,569	19,747	17,838
Sheet and strip	142,479	214,439	195,163	153,601
Bars & certain shapes	46,062	55,686	41,667	33,809
Wire rod	13,055	12,170	7,044	7,820
Wire	17,245	14,235	12,317	16,273
Pipe and tube	59,660	66,996	67,284	62,713
Tool steel (all forms)	13,610	21,482	25,478	25,766
Subtotal	332,941	456,490	399,547	346,773
Total	3,190,253	4,232,337	3,463,008	3,308,248

[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 E-28
Steel mill products and certain fabricated steel products: Unit value of U.S. imports for consumption, 1990-93

(Per short ton)

Item	1990	1991	1992	1993
Carbon and certain alloy[1] steel:				
Semifinished[2]	$234	$253	$217	$211
Plate	400	392	346	352
Sheet and strip:				
Hot rolled	331	317	299	306
Cold rolled	502	492	486	505
Galvanized	581	542	545	499
Tin plate	616	624	617	614
Tin free	581	606	614	611
Other coated	643	619	588	589
Average, sheet and strip	461	446	434	428
Bar:				
Hot finished	463	462	434	433
Cold finished	684	701	701	652
Reinforcing	316	319	258	259
Light shapes	336	328	321	322
Average, bar	460	467	434	442
Wire rod	356	359	341	354
Wire	748	743	759	712
Wire products	996	1,030	1,029	1,052
Structural shapes and units:				
Heavy structurals	359	403	374	376
Fabricated structurals	1,371	1,373	1,255	1,176
Average, structurals	467	539	503	534
Rails and related products	390	441	488	522
Pipe and tube:				
Oil country tubular goods	728	757	989	685
Line pipe	510	597	541	475
Mechanical pipe	891	920	886	814
Structural pipe	538	519	477	480
Pressure tubing	1,093	1,082	1,081	1,011
Other (incl. standard)	503	522	517	516
Average, pipe and tube	580	618	596	568
Average, all carbon and certain alloy[1] steel	465	474	440	414
Stainless and alloy tool steel:				
Stainless steel:				
Semifinished[2]	$1,306	$1,493	$1,489	$1,138
Plate	2,480	2,582	2,204	1,934
Sheet and strip:				
Sheet	1,841	1,798	1,712	1,647
Strip	3,084	3,211	3,304	3,020
Average, sheet and strip	1,991	1,971	1,873	1,760
Bars and shapes	2,654	2,547	2,330	2,139
Wire rod	2,421	2,319	1,988	1,893
Wire	3,916	4,054	3,834	3,577
Pipe and tube	3,951	4,034	4,078	3,704
Alloy tool steel (all forms)	2,234	1,747	2,127	1,880
Average, all stainless and alloy tool steel	2,328	2,319	2,215	1,893

[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 American Iron & Steel Institute, and official statistics of the U.S. Department of Commerce.

Table E-29
Steel mill products and certain fabricated steel products: Unit value of U.S. exports, 1990-93

(Per short ton)

Item	1990	1991	1992	1993
Carbon and certain alloy[1] steel:				
Semifinished[2]	$390	$361	$408	348
Plate	520	419	482	466
Sheet and strip:				
Hot rolled	369	329	393	419
Cold rolled	679	652	697	713
Galvanized	689	694	671	693
Tin plate	465	518	527	515
Tin free	621	624	613	600
Other coated	1,227	1,150	1,051	964
Average, sheet and strip	530	452	574	636
Bar:				
Hot finished	606	634	660	581
Cold finished	1,005	1,023	830	890
Reinforcing	321	288	286	283
Light shapes	444	465	484	467
Average, bar	549	508	531	493
Wire rod	457	397	504	458
Wire	1,146	1,049	1,075	1,227
Wire products	2,170	1,746	2,050	1,850
Structural shapes and units:				
Heavy structurals	436	423	453	477
Fabricated structurals	1,555	1,682	1,675	1,845
Average, structurals	864	906	905	973
Rails and related products	221	760	873	775
Pipe and tube:				
Oil country tubular goods	932	919	1,082	1,080
Line pipe	997	891	925	950
Other[3]	1,376	1,286	1,228	1,214
Average, pipe and tube	1,126	1,019	1,093	1,113
Average, all carbon and certain alloy[1] steel	606	578	695	709
Stainless and alloy tool steel:				
Stainless steel:				
Semifinished[2]	$3,346	$2,488	$5,622	$3,876
Plate	2,247	2,346	2,993	2,619
Sheet and strip:				
Sheet	2,304	2,226	2,604	2,350
Strip	2,185	2,156	2,426	2,622
Average, sheet and strip	2,228	2,188	2,500	2,508
Bars and shapes	2,878	3,278	2,090	2,951
Wire rod	2,412	2,881	3,122	3,054
Wire	4,792	5,392	5,648	6,382
Pipe and tube	4,438	4,486	4,577	4,444
Alloy tool steel (all forms)	2,962	2,500	4,265	3,937
Average, all stainless and alloy tool steel	2,729	2,614	2,955	3,076

[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 American Iron & Steel Institute, and official statistics of the U.S. Department of Commerce.

Table E-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, 1990-93

Item	1990	1991	1992	1993
	Quantity (short tons)			
Carbon and certain alloy[1] steel:				
Semifinished:				
Ingots	65,400	2,706	4,922	17,795
Blooms and billets	496,389	586,127	680,504	838,106
Slabs and sheet bars	1,740,209	1,407,776	1,621,717	4,003,304
Total	2,301,998	1,996,610	2,307,144	4,859,205
Plate:				
Carbon	835,904	694,877	784,529	551,838
Alloy	86,923	84,125	93,643	160,373
Total	922,826	779,002	878,172	712,211
Sheet and strip:				
Hot rolled:				
Sheet	2,904,187	2,606,689	3,360,533	2,865,498
Strip	96,349	105,520	136,782	144,431
Cold rolled:				
Black plate	146,079	129,488	152,394	85,178
Electrical	76,163	81,976	81,842	114,857
Other sheet	1,913,520	1,744,854	1,954,906	1,849,048
Other strip	118,377	119,987	147,309	141,282
Galvanized	1,649,264	1,527,317	1,995,612	1,473,969
Tin plate	313,549	310,962	321,674	260,038
Tin free	114,045	114,267	132,334	127,086
Other coated	192,491	189,857	283,754	147,094
Total, sheet and strip	7,524,025	6,930,919	8,567,140	7,208,481
Bars:				
Hot rolled:				
Carbon	464,375	421,611	448,213	522,137
Alloy	202,466	231,736	290,495	418,563
Cold rolled:				
Carbon	91,358	79,946	84,107	156,047
Alloy	44,295	38,520	32,088	58,837
Reinforcing	147,882	107,344	119,273	120,665
Light structural shapes	84,880	64,689	83,021	116,886
Total, bars	1,035,255	943,845	1,057,195	1,393,135
Wire rod and related products:				
Wire rod:				
Carbon	936,837	800,363	1,078,013	1,319,508
Alloy	19,276	20,663	28,792	36,981
Wire:				
Carbon	375,454	337,141	373,587	462,777
Alloy	38,555	37,609	38,305	43,446
Wire products:				
Nails	373,685	286,915	339,944	353,957
Barbed wire	15,350	11,167	12,106	16,740
Wire fencing	46,164	36,793	38,382	38,813
Bale ties	696	497	558	896
Wire strand	152,051	102,065	122,722	133,926
Wire rope	72,380	74,402	73,204	70,491
Total, wire rod and related products	2,030,446	1,707,616	2,105,612	2,477,534
Structurals:				
Heavy	911,556	519,377	503,124	594,921
Fabricated	109,037	84,984	86,488	147,153
Total	1,020,593	604,361	589,613	742,074

See footnotes at end of table.

Table E-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, 1990-93

Item	1990	1991	1992	1993
	Quantity (short tons)			
Rails and related products:				
Rails	301,410	254,189	245,144	204,265
Joint bars and tie plates	10,205	12,991	9,596	12,670
Track spikes	2,602	3,352	3,094	2,985
Wheels and axles	35,337	33,064	41,586	48,844
Total	349,555	303,596	299,418	268,764
Pipes and tubes:				
Oil country tubular goods	381,022	412,616	100,646	353,300
Line pipe	695,930	1,003,500	404,234	514,241
Mechanical pipe	186,242	169,832	147,732	195,861
Structural pipe	275,432	209,824	227,314	288,680
Pressure tubing	38,044	35,881	27,536	37,351
Other (including standard)	965,519	855,502	593,415	623,125
Total	2,542,189	2,687,154	1,500,877	2,012,557
Stainless and alloy tool steel:				
Stainless:				
Semifinished:				
Ingots	273	2,702	340	987
Blooms and billets	41,560	32,516	26,317	59,432
Slabs and sheet bars	18,989	13,744	10,520	53,043
Total	60,822	48,962	37,177	113,462
Plate	10,464	13,602	15,231	19,063
Sheet and strip:				
Sheet:				
Hot rolled	17,009	12,595	29,254	60,122
Cold rolled	135,126	142,537	174,041	270,327
Strip	20,898	21,698	22,891	29,605
Total, sheet and strip	173,033	176,830	226,186	360,054
Bars and shapes	44,526	52,493	57,499	70,067
Wire rod	23,128	25,897	39,616	40,707
Wire	18,328	17,054	19,089	21,969
Pipe and tube	47,220	48,218	42,612	43,535
Alloy tool steel (all forms):				
Semifinished[2]	6,771	10,608	2,348	7,850
Bars	26,843	25,407	25,509	27,845
Other	5,690	9,143	10,066	15,454
Total, stainless and alloy tool steel	39,304	45,158	37,923	51,150
	Share of product group total (percent)			
Carbon and certain alloy[1] steel:				
Semifinished:				
Ingots	2.84	0.14	0.21	0.37
Blooms and billets	21.56	29.36	29.50	17.25
Slabs and sheet bars	75.60	70.51	70.29	82.39
Total	100.00	100.00	100.00	100.00
Plate:				
Carbon	90.58	89.20	89.34	77.48
Alloy	9.42	10.80	10.66	22.52
Total	100.00	100.00	100.00	100.00

See footnotes at end of table.

Table E-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, 1990-93

Item	1990	1991	1992	1993
	Share of product group total (percent)—Continued			
Sheet and strip:				
Hot rolled:				
Sheet	38.60	37.61	39.23	39.75
Strip	1.28	1.52	1.60	2.00
Cold rolled:				
Black plate	1.94	1.87	1.78	1.18
Electrical	1.01	1.18	0.96	1.59
Other sheet	25.43	25.17	22.82	25.65
Other strip	1.57	1.73	1.72	1.96
Galvanized	21.92	22.04	23.29	20.45
Tin plate	4.17	4.49	3.75	3.61
Tin free	1.52	1.65	1.54	1.76
Other coated	2.56	2.74	3.31	2.04
Total, sheet and strip	100.00	100.00	100.00	100.00
Bars:				
Hot rolled:				
Carbon	44.86	44.67	42.40	37.48
Alloy	19.56	24.55	27.48	30.04
Cold rolled:				
Carbon	8.82	8.47	7.96	11.20
Alloy	4.28	4.08	3.04	4.22
Reinforcing	14.28	11.37	11.28	8.66
Light structural shapes	8.20	6.85	7.85	8.39
Total, bars	100.00	100.00	100.00	100.00
Wire rod and related products:				
Wire rod:				
Carbon	46.14	46.87	51.20	53.26
Alloy	0.95	1.21	1.37	1.49
Wire:				
Carbon	18.49	19.74	17.74	18.68
Alloy	1.90	2.20	1.82	1.75
Wire products:				
Nails	18.40	16.80	16.14	14.29
Barbed wire	0.76	0.65	0.57	0.68
Wire fencing	2.27	2.15	1.82	1.57
Bale ties	0.03	0.03	0.03	0.04
Wire strand	7.49	5.98	5.83	5.41
Wire rope	3.56	4.36	3.48	2.85
Total, wire rod and related products	100.00	100.00	100.00	100.00
Structurals:				
Heavy	89.32	85.94	85.33	80.17
Fabricated	10.68	14.06	14.67	19.83
Total	100.00	100.00	100.00	100.00
Rails and related products:				
Rails	86.23	83.73	81.87	76.00
Joint bars and tie plates	2.92	4.28	3.20	4.71
Track spikes	0.74	1.10	1.03	1.11
Wheels and axles	10.11	10.89	13.89	18.17
Total	100.00	100.00	100.00	100.00
Pipes and tubes:				
Oil country tubular goods	14.99	15.36	6.71	17.55
Line pipe	27.38	37.34	26.93	25.55
Mechanical pipe	7.33	6.32	9.84	9.73
Structural pipe	10.83	7.81	15.15	14.34
Pressure tubing	1.50	1.34	1.83	1.86
Other (including standard)	37.98	31.84	39.54	30.96
Total	100.00	100.00	100.00	100.00

See footnotes at end of table.

Table E-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, 1990-93

Item	1990	1991	1992	1993
	Share of product group total (percent)—Continued			
Stainless and alloy tool steel:				
Stainless:				
Semifinished:				
Ingots	0.45	5.52	0.91	0.87
Blooms and billets	68.33	66.41	70.79	52.38
Slabs and sheet bars	31.22	28.07	28.30	46.75
Total	100.00	100.00	100.00	100.00
Plate	100.00	100.00	100.00	100.00
Sheet and strip:				
Sheet:				
Hot rolled	9.83	7.12	12.93	16.70
Cold rolled	78.09	80.61	76.95	75.08
Strip	12.08	12.27	10.12	8.22
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]	17.23	23.49	6.19	15.35
Bars	68.30	56.26	67.26	54.44
Other	14.48	20.25	26.54	30.21
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 E-31
Steel mill products and certain fabricated steel products: U.S. exports of specified products and exports as a percent of major product groupings, 1990-93

Item	1990	1991	1992	1993
	Quantity (short tons)			
Carbon and certain alloy[1] steel:				
Semifinished[2]	515,848	679,017	417,424	529,560
Plate:				
Carbon	122,632	219,715	150,589	148,242
Alloy	11,129	16,128	14,895	18,239
Total	133,760	235,842	165,485	166,481
Sheet and strip:				
Hot rolled:				
Sheet	990,947	2,063,015	619,949	262,778
Strip	47,658	36,709	56,051	38,027
Cold rolled:				
Black plate	2,382	4,883	4,734	6,462
Electrical	47,574	84,184	47,875	52,226
Other sheet	346,747	380,228	338,486	343,143
Other strip	133,623	126,341	127,654	121,387
Galvanized	286,377	303,358	297,788	268,182
Tin plate	147,705	150,737	279,122	192,715
Tin free	25,605	37,987	59,805	70,921
Other coated	71,284	70,446	86,990	109,203
Total, sheet and strip	2,099,903	3,257,888	1,918,453	1,465,044
Bars:				
Hot rolled:				
Carbon	137,475	136,338	125,435	141,944
Alloy	73,738	91,126	91,015	127,628
Cold rolled:				
Carbon	40,412	38,469	51,764	49,970
Alloy	4,846	10,179	13,046	14,816
Reinforcing	118,919	234,616	183,557	227,254
Light structural shapes	52,921	49,540	45,987	65,063
Total, bars	428,311	560,268	510,804	626,675
Wire rod and related products:				
Wire rod:				
Carbon	94,960	155,710	58,416	47,786
Alloy	6,260	6,522	10,174	11,964
Wire:				
Carbon	54,841	75,236	76,421	72,473
Alloy	11,611	11,539	11,536	15,337
Wire products:				
Nails	11,853	14,135	17,143	17,819
Barbed wire	2,715	3,997	2,124	2,938
Wire fencing	7,694	10,794	14,209	20,667
Wire strand	14,704	18,245	18,170	21,485
Wire rope	4,582	4,380	4,927	8,461
Total, all wire rod and related products	209,220	300,559	213,121	218,930
Structurals:				
Heavy	305,804	405,222	281,533	317,701
Fabricated	189,204	251,796	164,879	180,713
Total	495,007	657,019	446,412	498,413
Rails and related products:				
Rails	110,214	77,005	34,769	62,255
Joint bars and tie plates	261,635	15,601	19,416	31,302
Wheels and axles	7,191	15,450	20,023	21,890
Total	379,039	108,056	74,208	115,447
Pipes and tubes:				
Oil country tubular goods	194,770	362,765	227,245	171,759
Line pipe	73,420	162,052	187,652	125,818
Other[3]	189,147	213,358	249,684	256,725
Total	457,336	738,176	664,582	554,303

See footnotes at end of table.

Table E-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, 1990-93

Item	1990	1991	1992	1993
	Quantity (short tons)—Continued			
Stainless and alloy tool steel:				
Stainless:				
Semifinished[2]	6,472	20,063	5,487	7,470
Plate	8,534	9,193	6,598	6,811
Sheet and strip:				
Sheet:				
Hot rolled	5,876	14,500	9,239	3,781
Cold rolled	17,266	30,906	23,204	21,943
Strip	40,806	52,586	45,625	35,522
Total, sheet and strip	63,947	97,991	78,069	61,246
Bars and shapes	16,005	16,989	19,935	11,457
Wire rod	5,413	4,224	2,256	2,561
Wire	3,599	2,640	2,181	2,550
Pipe and tube	13,443	14,934	14,701	14,111
Alloy tool steel (all forms)	4,594	8,592	5,974	6,545
Total, stainless and alloy tool steel	122,007	174,626	135,201	112,752
	Share of product group total (percent)			
Carbon and certain alloy[1] steel:				
Semifinished[2]	100.00	100.00	100.00	100.00
Plate:				
Carbon	91.68	93.16	91.00	89.04
Alloy	8.32	6.84	9.00	10.96
Total	100.00	100.00	100.00	100.00
Sheet and strip:				
Hot rolled:				
Sheet	47.19	63.32	32.32	17.94
Strip	2.27	1.13	2.92	2.60
Cold rolled:				
Black plate	0.11	0.15	0.25	0.44
Electrical	2.27	2.58	2.50	3.56
Other sheet	16.51	11.67	17.64	23.42
Other strip	6.36	3.88	6.65	8.29
Galvanized	13.64	9.31	15.52	18.31
Tin plate	7.03	4.63	14.55	13.15
Tin free	1.22	1.17	3.12	4.84
Other coated	3.39	2.16	4.53	7.45
Total, sheet and strip	100.00	100.00	100.00	100.00
Bars:				
Hot rolled:				
Carbon	32.10	24.33	24.56	22.65
Alloy	17.22	16.26	17.82	20.37
Cold rolled:				
Carbon	9.44	6.87	10.13	7.97
Alloy	1.13	1.82	2.55	2.36
Reinforcing	27.76	41.88	35.93	36.26
Light structural shapes	12.36	8.84	9.00	10.38
Total, bars	100.00	100.00	100.00	100.00

See footnotes at end of table.

Table E-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, 1990-93

Item	1990	1991	1992	1993
	Share of product group total (percent)—Continued			
Wire rod and related products:				
Wire rod:				
Carbon	45.39	51.81	27.41	21.83
Alloy	2.99	2.17	4.77	5.46
Wire:				
Carbon	26.21	25.03	35.86	33.10
Alloy	5.55	3.84	5.41	7.01
Wire products:				
Nails	5.67	4.70	8.04	8.14
Barbed wire	1.30	1.33	1.00	1.34
Wire fencing	3.68	3.59	6.67	9.44
Wire strand	7.03	6.07	8.53	9.81
Wire rope	2.19	1.46	2.31	3.86
Total, all wire rod and related products	100.00	100.00	100.00	100.00
Structurals:				
Heavy	61.78	61.68	63.07	63.74
Fabricated	38.22	38.32	36.93	36.26
Total	100.00	100.00	100.00	100.00
Rails and related products:				
Rails	29.08	71.26	46.85	53.93
Joint bars and tie plates	69.03	14.44	26.16	27.11
Wheels and axles	1.90	14.30	26.98	18.96
Total	100.00	100.00	100.00	100.00
Pipes and tubes:				
Oil country tubular goods	42.59	49.14	34.19	30.99
Line pipe	16.05	21.95	28.24	22.70
Other[3]	41.36	28.90	37.57	46.31
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	100.00	100.00
Sheet and strip:				
Sheet:				
Hot rolled	9.19	14.80	11.83	6.17
Cold rolled	27.00	31.54	29.72	35.83
Strip	63.81	53.66	58.44	58.00
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 E-32
Steel mill products and certain fabricated steel products: U.S. imports for consumption, by customs areas, 1990-93

(Short tons)

Item	1990	1991	1992	1993
Atlantic Coast	2,928,879	2,796,230	2,856,868	2,987,820
Great Lakes-Canadian border	5,846,525	5,092,319	6,788,052	8,602,841
Gulf Coast-Mexican border	4,633,694	4,388,184	4,051,683	5,107,798
Off-shore	309,270	267,302	293,409	308,971
Pacific Coast	4,425,344	3,837,281	3,790,493	3,386,538
Total	18,143,711	16,381,316	17,780,504	20,393,968

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

Table E-33
Steel mill products and certain fabricated steel products: U.S. imports for consumption through the Atlantic coast customs area, 1990-93

(Short tons)

Item	1990	1991	1992	1993
Carbon and certain alloy[1] steel:				
Semifinished[2]	172,652	215,983	197,728	359,030
Plate	140,747	135,459	119,918	101,359
Sheet and strip	1,288,286	1,363,034	1,474,263	1,244,121
Bars and certain shapes	102,207	75,641	90,076	81,101
Wire rod	185,722	150,070	206,153	264,586
Wire	76,338	56,557	60,118	80,773
Wire products	211,516	142,681	180,784	197,623
Structural shapes and units	192,938	91,410	85,277	127,664
Rails and related products	26,018	27,479	22,651	15,049
Pipe and tube	360,166	366,760	216,592	177,944
Total	2,756,591	2,625,076	2,653,559	2,649,250
Stainless and alloy tool steel:				
Stainless steel:				
Semifinished[2]	21,028	14,741	12,091	61,457
Plate	3,317	3,742	6,506	9,815
Sheet and strip	62,975	66,343	85,256	155,033
Bars and certain shapes	19,501	23,850	27,003	33,816
Wire rod	17,513	18,497	31,080	31,087
Wire	10,169	9,195	9,461	12,318
Pipe and tube	18,163	15,230	11,508	12,916
Tool steel (all forms)	19,621	19,555	20,405	22,127
Total, stainless and tool	172,288	171,154	203,309	338,570
Grand total	2,928,879	2,796,230	2,856,868	2,987,820

[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 E-34
Steel mill products and certain fabricated steel products: U.S. imports for consumption through the Great Lakes-Canadian border customs area, 1990-93

(Short tons)

Item	1990	1991	1992	1993
Carbon and certain alloy[1] steel:				
Semifinished[2]	376,130	147,430	497,809	1,752,089
Plate	275,279	225,946	296,303	198,824
Sheet and strip	2,769,747	2,472,889	3,409,624	3,425,242
Bars and certain shapes	590,935	557,758	722,328	990,709
Wire rod	387,724	394,153	527,597	618,847
Wire	202,258	197,111	231,314	288,854
Wire products	96,089	87,258	100,003	104,274
Structural shapes and units	399,695	267,925	284,051	331,629
Rails and related products	196,840	125,448	128,874	119,670
Pipe and tube	446,874	517,440	481,639	604,683
Total	5,741,573	4,993,357	6,679,543	8,434,821
Stainless and alloy tool steel:				
Stainless steel:				
Semifinished[2]	26,516	21,834	19,847	43,838
Plate	2,036	1,496	1,883	3,485
Sheet and strip	38,187	29,589	48,531	67,160
Bars and certain shapes	8,597	9,236	11,456	14,093
Wire rod	1,064	1,866	2,765	2,971
Wire	4,816	5,214	6,311	7,475
Pipe and tube	7,942	7,264	6,080	8,634
Tool steel (all forms)	15,794	22,463	11,637	20,364
Total, stainless and tool	104,951	98,962	108,509	168,020
Grand total	5,846,525	5,092,319	6,788,052	8,602,841

[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 E-35
Steel mill products and certain fabricated steel products: U.S. imports for consumption through the Gulf coast-Mexican border customs area, 1990-93

(Short tons)

Item	1990	1991	1992	1993
Carbon and certain alloy[1] steel:				
Semifinished[2]	616,184	603,254	576,719	1,500,259
Plate	424,239	361,340	418,292	352,910
Sheet and strip	1,455,723	1,369,315	1,646,240	1,259,810
Bars and certain shapes	124,950	150,691	100,628	153,957
Wire rod	217,475	197,187	302,093	398,005
Wire	53,333	44,736	48,401	53,152
Wire products	175,874	133,800	152,177	158,996
Structural shapes and units	197,391	128,798	124,448	190,693
Rails and related products	55,424	61,407	72,166	44,184
Pipe and tube	1,229,715	1,233,838	503,817	852,849
Total	4,550,308	4,284,367	3,944,981	4,964,815
Stainless and alloy tool steel:				
Stainless steel:				
Semifinished[2]	13,275	11,879	5,145	7,629
Plate	3,042	6,001	4,933	4,147
Sheet and strip	39,834	54,715	62,099	94,195
Bars and certain shapes	8,266	10,425	10,128	11,626
Wire rod	1,824	2,142	1,769	2,188
Wire	2,162	1,848	2,224	1,326
Pipe and tube	12,488	15,145	16,738	15,456
Tool steel (all forms)	2,495	1,663	3,666	6,415
Total, stainless and tool	83,386	103,818	106,701	142,983
Grand total	4,633,694	4,388,184	4,051,683	5,107,798

[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 E-36
Steel mill products and certain fabricated steel products: U.S. imports for consumption through the offshore customs area, 1990-93

(Short tons)

Item	1990	1991	1992	1993
Carbon and certain alloy[1] steel:				
Semifinished[2]	(3)	0	0	2
Plate	6,066	5,182	3,615	5,819
Sheet and strip	100,253	66,482	87,630	84,308
Bars and certain shapes	115,415	99,676	98,240	115,183
Wire rod	15,574	12,199	10,073	16,870
Wire	12,654	13,339	10,667	10,851
Wire products	8,213	5,953	5,300	6,199
Structural shapes and units	12,233	11,587	12,444	10,575
Rails and related products	624	439	1,040	1,061
Pipe and tube	37,894	49,995	63,428	58,092
Total	308,925	264,852	292,438	308,960
Stainless and alloy tool steel:				
Stainless steel:				
Semifinished[2]	0	0	(3)	0
Plate	0	0	0	0
Sheet and strip	244	0	(3)	10
Bars and certain shapes	10	0	(3)	0
Wire rod	0	0	0	0
Wire	64	64	(3)	(3)
Pipe and tube	8	2,386	970	1
Tool steel (all forms)	19	0	0	0
Total, stainless and tool	345	2,450	971	11
Grand total	309,270	267,302	293,409	308,971

[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 E-37
Steel mill products and certain fabricated steel products: U.S. imports for consumption through the Pacific coast customs area, 1990-93

(Short tons)

Item	1990	1991	1992	1993
Carbon and certain alloy[1] steel:				
Semifinished[2]	1,137,032	1,029,943	1,034,887	1,247,824
Plate	76,496	51,075	40,044	53,298
Sheet and strip	1,910,016	1,659,198	1,949,383	1,195,000
Bars and certain shapes	101,747	60,079	45,923	52,185
Wire rod	149,617	67,417	60,889	58,181
Wire	69,425	63,008	61,391	72,594
Wire products	168,632	142,147	148,652	147,730
Structural shapes and units	218,336	104,641	83,393	81,513
Rails and related products	70,650	88,822	74,687	88,801
Pipe and tube	467,540	519,121	235,402	318,989
Total	4,369,490	3,785,451	3,734,651	3,316,116
Stainless and alloy tool steel:				
Stainless steel:				
Semifinished[2]	3	507	94	538
Plate	2,068	2,363	1,910	1,615
Sheet and strip	31,792	26,184	30,299	43,657
Bars and certain shapes	8,152	8,981	8,912	10,532
Wire rod	2,728	3,392	4,002	4,461
Wire	1,117	733	1,094	849
Pipe and tube	8,619	8,193	7,315	6,527
Tool steel (all forms)	1,376	1,478	2,215	2,244
Total, stainless and tool	55,854	51,831	55,842	70,423
Grand total	4,425,344	3,837,281	3,790,493	3,386,538

[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.

APPENDIX F
Status Of Recent AD and CVD Investigations on Steel Products and Ferroalloys

Table F-1
Status of recent AD and CVD investigations on steel products and ferroalloys

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
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		

See footnotes at end of table.

Table F-1-Continued
Status of recent AD and CVD investigations on steel products and ferroalloys

Product description	Country	AD (731-TA)	CVD (701-TA)	USITC preliminary determination		USITC final determination	
				Date[1]	Outcome	Date[1]	Outcome
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
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	1-21-94	A
	France	637		2-16-93	A	1-21-94	A
	India	638		2-16-93	A	11-23-93	A
Stainless steel flanges	India	639		2-16-93	A	2-2-94	A
	Taiwan	640		2-16-93	A	2-2-94	A
Welded stainless steel pipe	Malaysia	644		4-2-93	A	3-7-94	N

See footnotes at end of table.

Table F-1-Continued
Status of recent AD and CVD investigations on steel products and ferroalloys

Product description	Country	AD (731-TA)	CVD (701-TA)	USITC preliminary determination		USITC final determination	
				Date[1]	Outcome	Date[1]	Outcome
Carbon steel wire rod	Brazil	646		6-7-93	A	3-25-94	N
	Canada	647		6-7-93	A	5-25-94	
	Japan	648		6-7-93	A	3-25-94	N
	Trinidad and Tobago	649		6-7-93	N		
Class 150 stainless steel threaded pipe fittings	Taiwan	658		9-16-93	A	9-6-94	
Grain-oriented silicon electrical steel	Italy	659	355	10-12-93	A	8-8-94	
	Japan	660		10-12-93	A	8-8-94	
Silicomanganese	Brazil	671		12-27-93	A		
	The People's Republic of China	672		12-27-93	A		
	Ukraine	673		12-27-93	A		
	Venezuela	674		12-27-93	A		
Stainless steel bar	Brazil	678		2-14-94	A		
	India	679		2-14-94	A		
	Italy	680		2-14-94	A		
	Japan	681		2-14-94	A		
	Spain	682		2-14-94	A		
Certain steel wire rod	Belgium	686		3-31-94	A		
	Germany	687	359	3-31-94	N		
Certain carbon steel butt-weld pipe fittings	France	688		4-14-94	A		
	India	689	360	4-14-94	A		
	Israel	690	361	4-14-94	A		
	Malaysia	691		4-14-94	A		
	Korea	692		4-14-94	A		
	Thailand	693		4-14-94	A		
	United Kingdom	694		4-14-94	A		
	Venezuela	695		4-14-94	A		
Stainless steel angles	Japan	699		5-23-94			

[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. USITC final determinations may be awaiting Commerce's preliminary dumping/subsidy determination.

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

APPENDIX G
U.S. Producers' and Converters' Capital Expenditures and Reasons for Such Expenditures, 1992 and 1993

Table G-1
Carbon and certain alloy steel: U.S. producers' and converters' capital expenditures and reasons for such expenditures,[1] 1992 and 1993

Item	1992 Environmental	1992 Total	1992 Reasons for expenditures[2] A	B	C	D	E	F	1993 Environmental	1993 Total	1993 Reasons for expenditures[2] A	B	C	D	E	F
	$1,000		*Number of responses*						*$1,000*		*Number of responses*					
Cokemaking facilities	107,273	325,928	5	0	2	1	11	0	92,774	203,286	6	1	3	1	9	0
Ironmaking facilities	25,376	169,080	12	1	7	2	7	0	25,335	303,542	14	1	6	2	5	0
Raw steelmaking facilities:																
Basic oxygen process	50,405	91,057	12	0	5	3	6	0	34,838	70,890	10	0	6	2	5	0
Electric furnace	41,895	138,802	22	8	23	7	20	1	23,928	129,673	30	14	21	9	11	1
Continuous casting	5,305	304,609	12	3	9	6	4	0	1,879	330,256	3	1	5	2	3	0
Secondary steelmaking facilities[4]	(3)	1,717	1	0	1	1	1	1	(3)	9,560	13	5	14	10	3	1
Flat-rolled products:																
Plate mills	1,064	26,473	5	0	1	3	1	0	(3)	42,537	3	0	3	2	0	0
Sheet and strip:																
Hot strip mills	(3)	235,846	10	1	10	12	4	0	7,053	186,287	12	1	13	9	3	0
Cold-rolled sheet mills	10,141	164,450	11	2	11	10	5	0	3,300	183,882	15	7	16	9	3	0
Galvanizing facilities	5,810	203,166	5	2	8	10	6	0	2,005	43,247	8	1	7	8	3	0
Other coating facilities	2,404	57,466	4	0	5	4	2	0	1,359	38,817	5	0	4	6	1	0
Bars, shapes, and light structural mills:																
Hot-finished	64	72,703	19	4	15	10	3	0	(3)	166,724	18	7	13	9	4	0
Cold-finished	712	2,977	6	1	5	4	3	1	(3)	13,661	6	3	5	1	2	0
Medium and heavy structural mills[5]	(3)	26,167	7	4	6	3	0	0	(3)	(3)	6	2	6	3	1	0
Rail mills	0	4,079	2	1	2	0	0	0	0	(3)	2	1	2	2	0	0
Wire rod mills	(3)	6,436	3	0	5	2	2	0	(3)	18,520	6	4	7	5	1	1
Wire drawing machines	2,793	22,103	16	7	10	4	9	0	1,133	24,159	13	6	7	4	5	1
Wire products	854	27,712	8	4	7	2	3	0	1,808	34,846	9	3	5	3	5	0
Pipes and tubes:																
Seamless pipe and tube mills	1,022	35,266	5	3	3	2	1	0	502	14,651	5	2	5	3	0	0
Welded pipe and tube mills	4,245	38,707	14	5	12	6	9	0	1,946	49,301	12	5	12	7	4	0
Other[6]	22,405	581,193	29	4	15	7	16	1	32,775	197,265	0	0	0	0	0	0
Total	287,281	2,535,937	209	51	161	99	113	4	234,773	2,297,658	196	64	160	97	68	4

[1] Includes expenditures for the specific type of facility as well as related facilities. Also includes expenditures for plant and equipment, land and land improvement, occupational safety and health, and environmental control.

[2] Principal reason(s) for investment are coded as follows: A = Facility maintenance and replacement; B = Increased capacity; C = Improvement in operating efficiency; D = Improvement in response to increased customer demand for higher quality products and improved service; E = Government regulation; F = Other (primarily safety reasons).

[3] Not shown.

[4] Includes ladle treatment (heat balance, alloy addition, degassing, decarburization, etc.) and other secondary refining processes (vacuum arc remelt, electroslag remelting, etc.).

[5] Structural shapes with a cross-section exceeding 3 inches.

[6] Includes expenditures which companies could not allocate to product groups.

Note.—Because of rounding, figures may not add to totals shown.

Source: Compiled from data submitted in response to questionnaires of the USITC.

Table G-2
Stainless and alloy tool steel: U.S. producers' and converters' capital expenditures and reasons for such expenditures,[1] 1992 and 1993

Item	1992								1993							
	Environmental	Total	Reasons for expenditures[2] A	B	C	D	E	F	Environmental	Total	Reasons for expenditures[2] A	B	C	D	E	F
	— $1,000 —		— Number of responses —						— $1,000 —		— Number of responses —					
Raw steelmaking facilities:																
Electric furnace	2,105	14,344	7	3	5	2	6	1	1,756	8,329	6	3	6	1	4	0
Continuous casting	(3)	19,922	3	2	4	1	2	0	0	(3)	1	0	1	0	0	0
Secondary steelmaking facilities[4]	(3)	832	2	2	3	0	1	0	0	(3)	2	2	1	0	0	0
Flat-rolled products:																
Plate mills	(3)	2,132	3	1	1	0	0	0	(3)	2,220	3	2	3	0	1	0
Sheet and strip:																
Hot strip mills	(3)	(3)	2	1	0	0	1	0	(3)	2,261	3	0	4	1	1	0
Cold-rolled sheet mills	611	12,338	5	2	4	3	2	0	162	34,726	4	3	4	1	2	0
Bars and shapes:																
Hot-finished	(3)	389	2	1	4	2	1	0	(3)	(3)	1	0	1	0	2	0
Cold-finished	(3)	834	4	2	6	3	2	0	(3)	1,024	2	0	2	1	1	1
Wire rod mills	0	(3)	2	1	3	0	0	0	(3)	(3)	1	1	1	1	0	1
Wire drawing machines	(3)	1,488	2	1	3	1	0	0	(3)	(3)	2	1	2	1	0	0
Pipes and tubes:																
Seamless pipe and tube mills	0	(3)	1	0	1	0	0	0	0	(3)	0	0	1	0	0	0
Welded pipe and tube mills	2,382	5,357	6	2	3	0	2	0	(3)	7,243	3	2	3	0	1	0
Other[5]	2,984	71,013	9	3	6	5	7	0	1,507	76,145	0	0	0	0	0	0
Total	10,141	132,784	48	21	43	17	24	1	4,980	139,762	28	14	29	6	12	2

[1] Includes expenditures for the specific type of facility as well as related facilities. Also includes expenditures for plant and equipment, land and land improvement, occupational safety and health, and environmental control.

[2] Principal reason(s) for investment are coded as follows: A = Facility maintenance and replacement; B = Increased capacity; C = Improvement in operating efficiency; D = Improvement in response to increased customer demand for higher quality products and improved service; E = Government regulation; F = Other (primarily safety reasons).

[3] Not shown.

[4] Includes ladle treatment (heat balance, alloy addition, degassing, decarburization, etc.) and other secondary refining processes (vacuum arc remelt, electroslag remelting, etc.).

[5] Includes expenditures which companies could not allocate to product groups.

Note.—Because of rounding, figures may not add to totals shown.

Source: Compiled from data submitted in response to questionnaires of the USITC.

APPENDIX H
U.S. Producers' and Converters' Research and Development Expenditures and Reasons for Such Expenditures, 1992 and 1993

Table H-1
Carbon and certain alloy steel: U.S. producers' and converters' research and development expenditures and reasons for such expenditures, 1992 and 1993

Item	1992	1993	Reasons for expenditures in 1993[1]					
			A	B	C	D	E	F
	— $1,000 —		— Number of responses —					
Cokemaking facilities	4,097	3,478	3	2	4	0	2	0
Ironmaking facilities	5,930	4,400	3	2	3	1	0	0
Raw steelmaking facilities:								
Basic oxygen process	8,226	5,753	3	2	3	1	2	0
Electric furnace	7,767	8,194	5	4	4	5	1	0
Continuous casting	6,449	6,978	6	6	4	2	1	0
Secondary steelmaking facilities[3]	362	(2)	0	2	1	2	0	0
Flat-rolled products:								
Plate mills	5,599	6,549	3	3	1	3	0	0
Sheet and strip:								
Hot strip mills	7,153	4,870	4	5	2	4	1	0
Cold-rolled sheet mills	17,946	14,978	6	7	3	7	1	0
Galvanizing facilities	8,580	14,037	4	5	2	5	1	0
Other coating facilities	16,417	11,210	3	3	1	5	0	0
Bars, shapes, and light structural mills:								
Hot-finished	2,766	(2)	0	1	1	1	0	0
Cold-finished	(2)	(2)	0	0	0	0	0	0
Medium and heavy structural mills[4]	(2)	(2)	1	1	1	1	0	0
Rail mills	(2)	(2)	1	1	1	1	0	0
Wire rod mills	742	272	2	4	3	2	0	0
Wire drawing machines	339	(2)	1	1	2	1	0	0
Wire products	(2)	(2)	1	1	3	1	0	0
Pipes and tubes:								
Seamless pipe and tube mills	(2)	(2)	2	1	0	0	0	0
Welded pipe and tube mills	873	2,060	3	3	5	1	0	0
Other[5]	13,595	12,795	1	1	1	1	0	0
Total	111,499	104,327	52	55	45	44	9	0

[1] Principal reason(s) for R&D expenditures are coded as follows: A = To improve operating efficiency; B = To respond to increased customer demand for higher quality products; C = To reduce energy consumption and/or pollution levels; D = To develop new steel products; E = To develop new steelmaking processes; F = Other.

[2] Not shown.

[3] Includes ladle treatment (heat balance, alloy addition, degassing, decarburization, etc.) and other secondary refining processes (vacuum arc remelt, electroslag remelting, etc.).

[4] Structural shapes with a cross-section exceeding 3 inches.

[5] Includes expenditures which companies could not allocate to product groups.

Note.—Because of rounding, figures may not add to totals shown.

Source: Compiled from data submitted in response to questionnaires of the USITC.

Table H-2
Stainless and alloy tool steel: U.S. producers' and converters' research and development expenditures and reasons for such expenditures, 1992 and 1993

Item	1992	1993	Reasons for expenditures in 1993[1]					
			A	B	C	D	E	F
	— *$1,000* —		— *Number of responses* —					
Raw steelmaking facilities:								
Electric furnace	510	(2)	1	2	0	0	1	0
Continuous casting	0	(2)	0	0	0	0	0	0
Secondary steelmaking facilities[3]	(2)	(2)	0	0	0	0	0	0
Flat-rolled products:								
Plate mills	(2)	(2)	1	1	0	0	0	0
Sheet and strip:								
Hot strip mills	(2)	(2)	0	1	1	1	0	0
Cold-rolled sheet mills	(2)	(2)	1	1	0	0	1	0
Bars and shapes:								
Hot-finished	(2)	(2)	1	2	0	1	1	0
Cold-finished	(2)	(2)	1	1	1	0	0	0
Wire rod mills	(2)	92	1	2	2	1	0	0
Wire drawing machines	(2)	(2)	1	1	1	1	0	0
Pipes and tubes:								
Seamless pipe and tube mills	(2)	(2)	0	0	1	0	0	0
Welded pipe and tube mills	(2)	(2)	0	0	1	0	0	0
Other[4]	16,663	17,606	0	0	0	0	0	0
Total	46,533	45,183	7	11	7	4	3	0

[1] Principal reason(s) for R&D expenditures are coded as follows: A = To improve operating efficiency; B = To respond to increased customer demand for higher quality products; C = To reduce energy consumption and/or pollution levels; D = To develop new steel products; E = To develop new steelmaking processes; F = Other.

[2] Not shown.

[3] Includes ladle treatment (heat balance, alloy addition, degassing, decarburization, etc.) and other secondary refining processes (vacuum arc remelt, electroslag remelting, etc.).

[4] Includes expenditures which companies could not allocate to product groups.

Note.—Because of rounding, figures may not add to totals shown.

Source: Compiled from data submitted in response to questionnaires of the USITC.